



# Coastal Recreation: A Handbook for Planners and Managers

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**U.S. DEPARTMENT OF COMMERCE**  
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**Office of Coastal Zone Management**

Prepared by Mark Stephens, summer employee of the Office of Coastal Zone Management, and by Robert B. Ditton, under contract.

Additional copies of this document may be obtained from:

Office of Coastal Zone Management  
National Oceanic and Atmospheric Administration  
3300 Whitehaven Street, N. W.  
Washington, D. C. 20235  
(202) 634-4245

COASTAL RECREATION:

A HANDBOOK FOR PLANNERS AND MANAGERS

BY ROBERT B. DITTON AND MARK STEPHENS

FOR U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
OFFICE OF COASTAL ZONE MANAGEMENT

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## PREFACE


This is one of a series of documents by the Office of Coastal Zone Management (OCZM) intended to provide technical assistance to coastal planners and managers on major issues they face.

Since coastal recreation opportunities vary according to state, it is reasonable to assume that each state's approach to and priorities for managing its recreation resources may vary. This informative reference document is provided to assist rather than to constrain the recreational planning efforts of the states in any way. The ideas, suggestions, and recommendations contained in this document are just that - they are not to be construed as OCZM policies.

The dedicated efforts of both Bob Ditton and Mark Stephens in preparing this handbook under tight time and budget constraints deserves our most sincere thanks. Numerous individuals have assisted the authors of this document. We are also most appreciative of their help. Three individuals deserve special mention for their review and comment of the final drafts: John Seymour, Marine Resources Management Program, Texas A&M University; David Reed, Department of Recreation and Parks, Texas A&M University; and E. Glenn Carls, University of Waterloo (Ontario). In addition, we are grateful to the eight state CZM offices which prepared the descriptions of their recreation program elements included within the text.

A handwritten signature in dark ink, reading "Paul R. Stang". The signature is fluid and cursive, with the first name "Paul" and last name "Stang" clearly legible.

Paul R. Stang  
Head, Technical Assistance Group  
Office of Coastal Zone Management  
National Oceanic and Atmospheric  
Administration



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## EXECUTIVE SUMMARY

"Recreation" may be described as any experience voluntarily engaged in largely during leisure (discretionary) time, from which the individual derives satisfaction. "Coastal recreation," a term often used interchangeably with "marine recreation," refers to such experiences derived from the coastal zone.

## EXECUTIVE SUMMARY

The following executive summary presents highlights of a document produced by the Office of Coastal Zone Management (OCZM) entitled Coastal Recreation: A Handbook for Planners and Managers. This summary has been developed to provide the reader with an overview of the topic, and to facilitate use of the full report.

## Value and Significance of Coastal Recreation

The value of coastal recreation extends well beyond leisure pursuits that take place along the nation's shoreline. The total recreation experience encompasses not only participation in such activities, but also incorporates the excitement of planning and anticipating recreational visits to the coast, the journeys to and from the recreational sites, and the enjoyment associated with reminiscences about the experience.

In addition, expenditures by recreationists frequently provide the underpinnings of local, regional and even major components of state economies in coastal areas, and support a number of industries which cater to recreational needs.

Finally, while the nation's beaches remain a locus for swimming, fishing, sunbathing, and fraternizing, burgeoning use pressures and changing public preferences have spawned growing recognition of less tangible recreation-related values, including esthetic enjoyment, ecological interest, historical and cultural enrichment, and spiritual renewal.

## Handbook Objectives

Consistent with the orientation of the Coastal Zone Management (CZM) Program, which is designed to accommodate the various conditions, needs, and resulting divergent approaches of various states, it is neither the mandate nor the intent of OCZM to prescribe a single methodology for coastal recreation planning and management. Rather, the objectives of this document are:

- (1) To provide a source document to facilitate information collection, analysis, and synthesis;

- (2) To identify recreational concerns likely to be of particular significance to CZM (and conversely, elements of state CZM programs most likely to be of significance to recreation);
- (3) To present a conceptual framework for coastal recreation planning and management that lends itself to effective integration into a comprehensive CZM program; and
- (4) To furnish a broad spectrum of potential management strategies and decision guides.

### Planning Approach

The concept of user-resource recreation planning has evolved in response to expanding challenges which have arisen during the past decade-and-a-half. Briefly, the approach outlines a planning process that:

- (1) Inventories and evaluates existing and potential recreational resources;
- (2) Simultaneously identifies user groups and their characteristics;
- (3) Adapts those analyses to yield estimates of recreation supply and demand in terms of available resource types and user group requirements; and
- (4) Translates these determinations, through the use of planning guides and benefit/cost evaluations, into a recreation plan.

The approach rests upon 10 basic tenets:

- (1) All potential recreation participants may be consolidated into a limited number of user groups, according to the nature and quality

of the recreation experience that each user desires.

(2) Each aggregated user group may be identified by certain social and economic characteristics that are determined from available census data; therefore, estimation of the magnitudes and distribution of each user group's future recreation requirements should be possible.

(3) Each user group requires certain types and amounts of resources in order to provide needed recreation opportunities.

(4) The amount of space allocated for each type of recreation experience is determined from physical, as well as psychological requirements.

(5) The recreation planning area may be defined in terms of existing landscape characteristics.

(6) The interacting environmental characteristics of each landscape type have a measurable potential for recreational use.

(7) Each recreation resource type within a region has a maximum user carrying capacity; when used beyond this capacity, resource quality and the recreation experience are impaired.

(8) The accessibility and distribution of recreation areas have an influence on their potential use.

(9) Natural resource capability and design studies can determine the most suitable kind, amount, and arrangement of recreational development.

(10) Recreation experiences have both tangible and intangible values; these values may include direct dollar expenditures, the personal satisfaction that users receive, and social and cultural benefits.

### Management Tools

A broad array of management strategies are available to enhance coastal recreation planning and program implementation. This discussion provides a summary description of selected representative management tools.

(1) Zoning and subdivision controls represent traditional approaches that may be applied in an innovative fashion. Exclusive use zoning creates special districts which allow only selected uses, and has been applied, in some instances, to establish zones allowing only recreation and related open space uses. Another category of exclusive use zone consists of flood plain or flood hazard districts. The application of this type of zone has increased with more stringent state and Federal incentives and sanctions concerning development in flood prone areas.

Setbacks delineate a building line that may generally be applied along shoreline areas to preserve beaches and dunes, and for esthetic purposes. Legal problems are likely to be encountered, however, where private property owners are prohibited from making a safe and economic



use of their lands. Setbacks might also be successfully applied in natural hazard areas, such as along earthquake fault lines or abutting hilltops or steep slopes.

Subdivision regulations offer additional opportunities for expanding public access to coastal recreation sites through conditions, required dedications, payment of fees, and improvements, which are among the exactions that can be imposed for subdivision approval. The park dedication concept has been further extended in some coastal areas to propose that developers dedicate public easements for shore access where subdivisions would block existing or potential access.

(2) Various means of public purchase form another category of methods which have received widespread use. Acquisition of fee simple absolute interests in property through condemnation or negotiated purchase have been supplemented by purchase and leaseback agreements, and acquisition of less than fee simple interests. The former approach involves a fee simple transaction, accompanied by specific land use restrictions prescribed by the purchasing public agency. Property is subsequently leased back to the former owner or a private developer to use within the limits set forth by the restrictions.

Less than fee simple acquisition involves easements, which are interests in property granting specific uses, or restricting them. An affirmative easement allows the holder to make certain uses of the property, while a negative easement involves limitations on its use. Affirmative land interests



which may be transferred to public ownership include hunting, fishing, and beach access. Highway and public utility easements also may be utilized in securing shoreland and beach access.

Negative easements, which may be secured to limit certain types of development, are analogous to the purchase of development rights. Examples include conservation, scenic, and wetlands easements.

(3) Preferential and deferred tax assessment can be applied to encourage shoreland property owners to maintain their holdings in a state that preserves open space. Assessments are based upon prevailing use, rather than the property's development potential. To prevent speculation, these strategies must generally be coupled with penalty provisions applied when owners renege upon the maintenance of open space uses.

(4) Litigation and legislation represent additional means of confirming beach access rights. Under the public trust doctrine, certain rights are reserved for the common use and benefit of the public, even if proprietary title has been granted to individuals. This doctrine has been widely applied in the states to protect public rights in tidelands and submerged lands below navigable waters. Upland areas, however, are generally subject to proprietary interests.

Legal doctrines applied to maintain public access in privately held shoreline areas include adverse possession, prescription, implied dedication, and customary rights. The first two doctrines represent methods of acquiring rights in real property through continuous, open, and adverse use. Adverse possession creates title to an estate in land, but its utility in acquiring

beach access is limited by the fact that the public rarely possesses beach areas continuously. Prescription differs from adverse possession in that it creates only an easement, and that it is now governed primarily by statute rather than common law.

Dedication rests upon an intention, express or implied, by a property owner to open his holdings to the public. An owner's acquiescence in sustained public use may support an implied dedication.

The customary rights doctrine holds that long-standing observance of a custom, such as public use of a beach, may give it the force of law under certain circumstances.

Legislation has been enacted in a few states (most notably Texas and Oregon) which reaffirms public access rights in so called "open beaches" laws. Open beaches statutes encourage and facilitate continued application of selected legal doctrines appropriate in particular states.

(5) Other methods that have found more limited application, but which may hold considerable promise for the future include compensable regulations, transferable development rights, and land banking. Under a system of compensable regulations, property owners would be compensated for losses suffered as a result of restrictions placed on their holdings. This approach offers the potential advantage of avoiding legal challenges on the grounds of condemnation without just compensation - the "taking issue."

Transferable development rights (TDR's) allow rights to develop property, rather than property itself, to be exchanged in the marketplace. This approach has had very limited application, and is most often proposed for urban areas to assist in such purposes as preservation of historic

neighborhoods subject to intense development pressures.

Land banking involves advance acquisition of major land parcels by a public entity for the purposes of guiding future development. This method has been successfully applied in several European nations, but substantial capital requirements have tended to limit its utilization in the United States.

(6) Management strategies may also be extended to coastal waters through such techniques as: restricting the type of uses that may be made of an entire water body or class of waters; restricting the time period allowed for various uses so that activities can be phased throughout the day; and surface water zoning, an approach which defines the nature, methods, or times of use of a water body, and deals with their interaction. Surface water zoning alternatives include:

- (a) Fixed-Area Zoning, which restricts uses to specified areas;
- (b) Time-Area Zoning, where specific uses are prohibited in specific areas at particular times; and
- (c) Separation-Distance Zoning, which establishes a buffer area between various mobile uses.

#### Complementing Existing Programs

A state CZM program's success will rely heavily upon its ability to effectively coordinate the efforts of diverse interests operating in its coastal zone. Fortunately, virtually all levels of government possess some degree of recreational responsibilities, and hence planning and management experience.

Of particular relevance to CZM is the fact that each state is required to maintain a State Comprehensive Outdoor Recreation Plan (SCORP) to comply with the provisions of the Federal Land and Water Conservation Fund Program administered by the U.S. Bureau of Outdoor Recreation. The development of SCORP's, along with other Federal, state, regional, and local initiatives, has produced baseline inventory data and projects, and an infrastructure for delivering outdoor recreation services.

The offshoot of the availability of this information is that where effective park and recreation programs are already operational, an excellent opportunity is provided for utilizing CZM as a forum for addressing specialized coastal recreation problems treated inadequately by existing institutions; reconciling conflicts between various interests; and formulating mutually supportive policies and practices.

Coordination may assume many dimensions, with varying types and degrees of interaction. Coordination measures might include:

- Formal or informal modes of information exchange, such as distribution or routing of relevant materials, designation of liaison officers, or formation of advisory committees to meet and discuss issues;
- An organizational scheme that delegates recreational and CZM program responsibilities to the same agency, or includes both under the same authority;
- Direct negotiation among competing interests;

- Loan or exchange of personnel;
- Use of common data bases, projections, and scenarios;
- Joint activities or committees, such as a citizens' advisory committee;
- Joint review authorities;
- Joint approval authorities; or
- Joint agreements, policies, programs, or regulations.

Various agencies and programs may bear upon coastal recreation through:

- (1) Direct responsibilities for land and water resource management (e.g., the National Park Service, state park agencies, local park and recreation authorities);
- (2) Technical and financial assistance capabilities (e.g., the U.S. Bureau of Outdoor Recreation and the Land and Water Conservation Fund Program); or
- (3) Functional responsibilities that do not pertain to recreation directly, but which may nevertheless impact it (e.g., state highway programs, public utilities).

State CZM officials must seek not only to coordinate their activities with all of these interests, but also to facilitate compatible efforts among the diverse groups which affect coastal recreation. Though geo-



graphically restricted, CZM is not a functional program, such as transportation, housing, water supply, or recreation. CZM is characterized by a broader charge and overview, and, therefore, must depend upon coordination with these functional programs, at all levels of government, to achieve CZM objectives. Thus, suggestions concerning coastal recreation are directed not only toward state CZM officials, but also other entities with recreational responsibilities.

### Public Access

Perhaps the paramount issue in coastal recreation is public access to the shoreline. The effective coastline available for public recreational pursuits is remarkably small when considered in the context of the United States' extensive shoreline resources.

In one sense, the coastal recreation resource supply is essentially fixed. Problems arise not from a diminution of the shoreline itself, but from the maldistribution and misallocation of coastal resources. An overriding objective of the CZM program consists of improving the process for allocating these resources to alternative uses, including recreation.

In its broadest sense, the access question extends beyond physical presence and participation in recreational activities - it encompasses visual, legal, social and economic access, the barriers that inhibit them, and the tools that are available to enhance them. Implicit in this definition is confrontation of challenges concerning equity, latent recreation demands, and interstate ramifications of coastal recreation planning and management. CZM affords an opportunity to formulate and

implement planning approaches and management strategies designed to deal with these challenges from a statewide perspective on a continuing basis.

### Private Sector

Often overlooked in public recreation programs is the key role that the private sector, and particularly commercial enterprise, can fulfill in securing public access to the coast. Much of the private resistance to expanding public access, especially critical perpendicular access across private land, could be eliminated through grants of immunity to tort liability for grantors of access easements to public entities. Likewise, public access must receive considerably more attention during the design of private facilities such as marinas, clubs, and subdivisions.

Improved and expanded coordination with the private sector represents a promising avenue for enhancing the availability of recreational opportunities, as well as facilitating planning and management through the provision of additional data. Limited public resources can be applied to provide and supplement opportunities which the commercial sector is unable to adequately supply, while private investment can be encouraged in a manner that will foster a balanced overall recreation program.

### Management Quandary

A quandary facing coastal zone planners and managers resembles, by analogy, the dual, and at times, contradictory mission of the National Park Service. The Park Service is charged with:

- (1) Preserving outstanding natural, cultural, and scenic resources, while simultaneously
- (2) Providing for public enjoyment derived through recreational use of these resources.

The point here is that while recreation and open space preservation are often thought of synonomously, objectives of various user groups often conflict in practice. Recreational development and intensive use frequently degrade coastal resources, and inhibit the pursuit of activities dependent upon a high level of resource quality. Conversely, harbors and beaches developed and maintained through artificial means have generated substantial recreational benefits, despite the fact that numerous existing projects might not have been allowed if originally proposed under current regulations.

Coastal planners and managers are charged with determining the appropriate role of recreational concerns among the expanding and often conflicting demands for shoreline resources. Such determinations must not only be sensitive to public and private interest group preferences, but must also reflect intimate understanding of the coast's attraction for recreational pursuits. Under the CZM program, primary responsibility rests with the states to select the institutional arrangements and management strategies appropriate to their needs, and to generate sufficient commitment, leadership, and public support to carry out this charge.



SECTION 1

INTRODUCTION



# 1. INTRODUCTION

## 1.1 Objectives

This paper is intended to provide a basic understanding of recreation supply, demand, impacts and management considerations, and to provide recommendations which can be integrated into a balanced long-term coastal zone management program.

## 1.2 Definitions of Recreation Terms

Activity Demand - activity consumed by a resident population, or in areas with extensive tourism, recreation activity consumed within a particular geographical region. Activity demand is calculated through the measurement and projection of recreation occasions.

Recreational Carrying Capacity - the predictable optimum amount of recreational activity that a recreation site can support or provide without permanent physical or biological deterioration of the site and/or appreciable impairment of the recreation experience.

Coastal Recreation - includes recreation taking place in the neritic zone (area from the edge of the continental shelf to the beach), beach zone and shoreland zone. Most coastal recreation takes place in the latter two zones together with the nearshore area of the neritic zone.

Coastal Recreation Activities - See Appendix I Classifications of Coastal Recreation Activities for lists of coastal recreation activities.

Inventory - an identification and classification of existing recreation resources and facilities.

Leisure - an unobligated block of discretionary time.

Marine Recreation - synonym for coastal recreation.

Recreation - any experience voluntarily engaged in largely during leisure (discretionary time) from which the individual derives satisfaction.

Recreation Occasion - the participation by one person in one activity in one day. If a person participated in three different activities in one day, for instance, it would count as three occasions.

Recreation Resource Planning - an integrated and comprehensive approach whereby the recreational demands of a resident as well as tourist population are related to the existing supply of recreation resources using criteria and standards to determine the extent of resource needs (or surpluses).

Recreation Supply - those resources that provide recreational opportunities (or have potential for providing opportunities) and are available to the public.

Standard - a measure of quantity and/or quality established as an attainable goal in providing outdoor recreation opportunities, areas, and facilities.

### 1.3 Overview

Numerous coastal recreation problems are documented in the literature<sup>1</sup>. Those receiving the greatest attention are: 1) insufficient public and commercial coastal recreation resources to meet the demand; 2) insufficient public access to existing coastal recreation resources; 3) conflicts between coastal recreation and other coastal uses; and 4) disagreement over capability and management intensity of existing coastal resources. The Coastal Zone Management Act (16 U.S.C. 1451, 86 Stat. 1280) provides an opportunity for considering and resolving these problems within a comprehensive coastal management framework.

The planning focus on coastal recreation is of recent vintage. But so, too, is the entire area of recreation resource planning. The area is not only new, but complex - complex because it integrates knowledge of people and natural resources. The Land and Water Conservation Fund Act of 1965 (16 U.S.C. 460) is generally credited with providing the catalyst for comprehensive recreation resource planning and bringing it to the forefront. While the Act provided financial assistance to states, it likewise required the state to develop a State Comprehensive Outdoor Recreation Plan (SCORP) dealing with

<sup>1</sup> Dennis W. Ducsik (ed.). Power, Pollution and Public Policy. Cambridge, Massachusetts: The MIT Press, 1971. See Chapter 3, "The Crisis in Shoreline Recreation," pp. 90-182.

Bostwick H. Ketchum (ed.). The Water's Edge: Critical Problems of the Coastal Zone. Cambridge, Massachusetts: The MIT Press, 1972. See Chapter 4, "Recreation and Aesthetics," pp. 84-92.

matters of statewide supply, demand and recreation resource needs. In developing SCORPs, states deal with a wide range of outdoor recreation activities; needs for coastal recreation are related to other needs from throughout the state.

Most documents dealing with outdoor recreation begin with a review of how increases in leisure (discretionary time), income, mobility and population have resulted in increased recreation activity. The planning requirements and funding assistance of the Land and Water Conservation Fund Act were essential for creating an additional supply of recreation resources to meet the burgeoning demand. (Recreation activity trends are discussed in Section 1.) Throughout each state, areas have been acquired and developed to meet established recreational needs. In SCORP planning the coast is but one of many critical areas.

With the passage of the Coastal Zone Management Act, a new comprehensive planning and management focus and framework has been created. Within this framework, critical coastal areas can be inventoried and designated for conservation and recreational purposes. If recreation is regarded as a priority use, a coastal recreation management element may be developed.

The recreation planning and management focus suggested under the CZM Act is important for several reasons:

- A. Participation in water based activities ranks high among outdoor recreation activities according to U.S. Bureau of Outdoor Recreation reports.<sup>2</sup>
- B. Pressures in the coastal zone to exclude existing or potential public recreation resources in favor of other supposedly higher dollar value uses are acute. These pressures need to be dealt with in a fashion that will provide adequate consideration of recreation value in planning and management.
- C. Statewide recreation planning has heretofore had to balance coastal and inland interests, as well as regional interests. Consequently, there has been an inability to focus on the severity of coastal recreation allocation problems. Planning and management under the CZM Act will focus on coastal resources and can provide the needed specific recreation analysis.

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<sup>2</sup> U.S. Bureau of Outdoor Recreation. The 1970 Survey of Outdoor Recreation Activities. U.S. Government Printing Office, Wash., D. C. 1972, pp. 7 - 13.



The coastal recreation focus provided for under the CZM Act need not be duplicative of previous SCORP efforts. While objectives and goals are slightly different, much of the supply and demand information gathered in earlier SCORP efforts can be recast and used to develop a coastal recreation focus.

#### 1.4 Coastal Recreation Trends

Recreation is generally regarded as one of the largest and fastest growing coastal zone uses. Past and present trends clearly demonstrate the magnitude and rate of this growth. It would be useful for coastal recreation planners to have this perspective prior to beginning work on coastal recreation planning. One approach to gaining a perspective on nationwide recreation trends is to examine each recreation activity in the following categories: 1) extent of participation in activity; 2) value of equipment purchased; 3) number of facilities, equipment (i.e., boats, motors, etc.) in use; and 4) extent of recreation-related spending. The extent of trend information for each of these categories will be discussed in this section.

Because of the very recent focus on coastal recreation (or the entire area of outdoor recreation for that matter), many of these trends have not been identified and/or specifically adapted for use in planning and management. The studies conducted by the Outdoor Recreation Resources Review Commission (ORRRC) in 1962 were significant because they were the first comprehensive nationwide study of outdoor recreation in the United States.

The ORRRC Reports placed heavy emphasis on the role of water in outdoor recreation. The reports indicated that 44 percent of outdoor recreation participants favored water-based activities over any others. Among water-based activities, swimming was by far the most popular, with the greatest per capita participation rate and total number of occasions. Boating and fishing were also among the ten most popular outdoor recreation activities, as can be seen in Table 1, which shows the popularity of water-based activities relative to other outdoor activities.

In a 1965 follow-up study of earlier ORRRC projections, the Bureau of Outdoor Recreation (BOR) found the five year increases in many recreation activities had far outstripped population increases. The study revealed that there was a

Table 1. Patterns of Demand for Selected Outdoor Recreation Activities in the U.S. -- 1960\*

| Activity and Per-<br>cent Participating<br>(Summer '60) | Days per<br>Participant<br>(Summer '60) | Days<br>per Person<br>(Summer '60) | Days<br>per Person<br>(Annual '60) |
|---|---|------------------------------------|------------------------------------|
| <u>Physically Active Recreation:</u>                    |   |                                    |                                    |
| Playing Outdoor Games<br>and Sports (30)                | 12.3                                    | 3.63                               | 12.71                              |
| Bicycling (9)   | 19.4                                    | 1.75                               | 5.17                               |
| Horseback Riding (6)                                    | 7.5                                     | .42                                | 1.25                               |
| <u>Water Sports:</u>                                    |   |                                    |                                    |
| Swimming (45)   | 11.5                                    | 5.15                               | 6.47                               |
| Canoeing (2)  | 3.0                                     | .07                                | .12                                |
| Sailing (2)   | 3.0                                     | .05                                | .11                                |
| Other Boating (22)                                      | 5.5                                     | 1.22                               | 1.95                               |
| Water Skiing (6)  | 5.1                                     | .30                                | .41                                |
| Fishing (29)  | 6.8                                     | 1.99                               | 4.19                               |
| <u>Backwoods Recreation:</u>                            |   |                                    |                                    |
| Camping (8)   | 5.7                                     | .46                                | .86                                |
| Hiking (6)  | 4.4                                     | .26                                | .42                                |
| Mountain Climbing (1)                                   | 3.7                                     | .04                                | .09                                |
| Hunting (3)   | 5.6                                     | .19                                | 1.86                               |
| <u>Passive Outdoor Pursuits:</u>                        |   |                                    |                                    |
| Picnicking (53)   | 4.0                                     | 2.14                               | 3.53                               |
| Walking for<br>Pleasure (33)                            | 13.1                                    | 4.34                               | 17.93                              |
| Driving for<br>Pleasure (52)                            | 12.7                                    | 6.68                               | 20.73                              |
| Sightseeing (42)  | 5.2                                     | 2.20                               | 5.91                               |
| Attending Outdoor<br>Sports Events (24)                 | 5.5                                     | 1.32                               | 3.75                               |
| Nature Walks (14)                                       | 5.2                                     | .75                                | 2.07                               |
| Attending Outdoor<br>Concerts (9)                       | 2.4                                     | .21                                | .39                                |
| Miscellaneous (5)                                       | 8.4                                     | .40                                | .57                                |

\*Rates shown are for persons twelve years old and over.

Source: U.S. Outdoor Recreation Resources Review Commission, National Recreation Survey, Study Report No. 19, Washington, D. C. (1962).

12 percent increase in fishing, an 18 percent increase in boating and a 15 percent increase in swimming during the years 1960-65, while the population increase was estimated at only 8 percent during that period.<sup>3</sup> This report also projected that between 1965 and 1980, swimming will increase 72 percent (and become nationally our most popular outdoor recreation activity), while the population will increase only 29 percent.

The U. S. Coast Guard (USCG) annually publishes statistical information obtained from state recreational boat numbering and casualty reporting systems. It should be noted that all of these ORRRC, BOR and USCG statistics and projections are for activity nationwide - (some have within state breakdowns and some do not) - and are of little use to coastal recreation planners or managers unless they are willing to accept these trends as approximations of coastal participation. Most are unwilling to do so, and as a result there is a need to develop trends relevant to coastal zone use.

Bigler and Winslow have attempted to separate out coastal activity from total activity participation data. Working with 1965 data, they project direct ocean oriented outdoor recreation occasions for 1970, 1975 and 1980 in Table 2. Like many other projections, these are straight line projections using a consistently stable rate of activity growth. Like many projections, the data doesn't readily exist to evaluate their projections. Their projections are useful, however, to gain an appreciation for the magnitude of coastal recreation activity.

Additional efforts are underway to gather data on the extent of coastal participation/activity. These efforts are mostly fishing-related. The U. S. Fish and Wildlife Service (FWS) has conducted its National Survey of Fishing and Hunting since 1955. This report provides a fresh water/salt water breakdown by region for data such as number of fishermen, number of fishing days and related spending. Unfortunately, state data has been aggregated into regions, making statewide coastal fishing trend analysis impossible. The National Marine Fisheries Service (NMFS) regularly issues (every five years) their Salt-Water Angling Survey in which type of salt water fishing and catch data is collected by region.

Additionally, efforts are underway by NMFS to conduct household studies by coastal regions to determine the extent of coastal sport fishing participation, sport fishing catch

<sup>3</sup> U.S. Bureau of Outdoor Recreation. The 1965 Survey of Outdoor Recreation Activities. U.S. Government Printing Office, Washington, D.C.



Table 2. Forecast of Direct Ocean Oriented Recreation Activity Occasions, 1970, 1975, and 1980, with Data for 1965<sup>1</sup>

|  | 1965         | Av. Annual<br>Rate of<br>Growth <sup>3</sup> | 1970         | Av. Annual<br>Rate of<br>Growth <sup>3</sup> | 1975         | Av. Annual<br>Rate of<br>Growth <sup>3</sup> | 1980          |
|--|--------------|--|--------------|--|--------------|--|---------------|
| Total Population (12 yrs. & over) Ocean States (Million) | 82           |  | 84           |  | 91           |  | 96            |
| Swimming Population-Ocean (%) <sup>2</sup>               | 22%          |  |              |  |              |  |               |
| Swim.participants (million)                              | 18           |  |              |  |              |  |               |
| Average number of days                                   | 14.3         |  |              |  |              |  |               |
| Swim.occasions (million)                                 | <u>257</u>   | 3.5%   | <u>308</u>   | 3.7%   | <u>369</u>   | 3.7%   | <u>443</u>    |
| Fishing Population (%) <sup>2</sup>                      | 42%          |  |              |  |              |  |               |
| Fish. participants (million)                             | 34           |  |              |  |              |  |               |
| Average number of days                                   | 7.6          |  |              |  |              |  |               |
| Fish. occasions (million)                                | <u>258</u>   | 1.8%   | <u>282</u>   | 1.8%   | <u>308</u>   | 1.8%   | <u>337</u>    |
| Boating Population (%) <sup>2</sup>                      | 24%          |  |              |  |              |  |               |
| Boat. participants (million)                             | 20           |  |              |  |              |  |               |
| Average number of days                                   | 6.5          |  |              |  |              |  |               |
| Boating occasions (million)                              | <u>130</u>   | 3.8%   | <u>157</u>   | 3.8%   | <u>189</u>   | 3.8%   | <u>228</u>    |
| Water Skiing Population (%) <sup>2</sup>                 | 6%           |  |              |  |              |  |               |
| Skiing participants (million)                            | 5            |  |              |  |              |  |               |
| Average number of days                                   | 6.6          |  |              |  |              |  |               |
| Skiing occasions (million)                               | <u>33</u>    | 6.1%   | <u>44</u>    | 6.1%   | <u>59</u>    | 6.1%   | <u>79</u>     |
| Surfing participants (million) <sup>4</sup>              | 1.0          |  |              |  |              |  |               |
| Average number of days                                   | 14.0         |  |              |  |              |  |               |
| Surfing occasions (million)                              | <u>14</u>    | 3.0%   | <u>16.2</u>  | 3.0%   | <u>18.5</u>  | 3.0%   | <u>21.5</u>   |
| Skin Diving Participants(million) <sup>5</sup>           | 1.0          |  |              |  |              |  |               |
| Average number of days                                   | 6.0          |  |              |  |              |  |               |
| Diving occasions (million)                               | <u>6.0</u>   | 5.0%   | <u>7.7</u>   | 5.0%   | <u>9.8</u>   | 5.0%   | <u>12.5</u>   |
| TOTAL DIRECT OCEAN ACTIVITY OCCASIONS (million)          | <u>698.0</u> |  | <u>814.9</u> |  | <u>953.3</u> |  | <u>1121.0</u> |

<sup>1</sup> Although the forecasts presented in this table are given in rounded absolute figures, it is assumed that these forecasts fall within a range of plus or minus 8%, a range of accuracy sufficient for recreation policy planning purposes.

<sup>2</sup> 1965 Survey of Outdoor Recreation Activities, op.cit., Tables 1 and 2, pp. 9 & 11.

<sup>3</sup> Growth rates were taken from data contained in table 1.

<sup>4</sup> Leisure - Investment Opportunities in a \$150 Billion Market. Merrill Lynch, Pierce, Fenner and Smith, Inc., p. 7.

<sup>5</sup> Dept. of Interior, by personal communication.  
(A. B. Bigler and D. E. Winslow, "Marine Recreation: Problems, Technologies, & Prospects to 1980," Proceedings of the 5th Annual Conference of the Marine Technology Society, Miami Beach, Florida, June 1969.)

(data gathering for sport fishing is far more complex than for commercial fishing) and sport fishing related spending. These studies have been completed for the Northeast and are underway in the Southeast United States.

Other alternatives for establishing trends include:

- 1) Gather recreation participation data through survey research in individual states so that coastal and inland activity can be separated. Some states have done this already because it's critical to their planning efforts and allocation of resources. However, most such studies fail to adequately represent the tourist and coastal recreation activities. Estimates of this activity need to be made independent of resident household studies.
- 2) Use purchase and sales data as proxies for trends in areas like sailing, scuba, and waterskiing where data is limited. Again, one must remember that with such data, it is difficult to differentiate coastal use from inland use. Four examples of purchase and sales data are given below:

A. Table 3. Retail Sales of Sporting Goods (in millions of dollars)

| <u>Product Category</u>                    | <u>1973</u> | <u>E1974</u> | <u>% Inc.</u> |
|--|-------------|--------------|---------------|
| Camping Appliances                         | 384         | 422          | 10            |
| Fishing Tackle                             | 407         | 469          | 15            |
| Pleasure Boats, Motors,<br>and Accessories | 2,197       | 2,417        | 10            |
| Recreational Vehicles                      | 2,446       | 1,639        | {-33}         |
| Skin Diving and Scuba<br>Equipment         | 65          | 78           | 20            |
| Water Skis                                 | 45          | 48           | 7             |

Note: Clothing is not included in above figures.

Source: Standard and Poors Corporation, Standard and Poors Leisure Industrial Surveys, 1, 1974. (Annual Report of business activity in 44 major industries including the leisure industry. Each survey discusses factors affecting industry growth, provides comparative data for the industry, and reproduces statistics for leading companies in that business.)

B. Table 4. Trends in Equipment Sales Over Time

| <u>Year</u> | <u>Outboard Motors Sold<br/>(thousands)</u> | <u>Outboard Boats Sold<br/>(thousands)</u> |
|-------------|---|--|
| 1952        | 337   | 164  |
| 1953        | 463   | 231  |
| 1954        | 479   | 223  |
| 1955        | 515   | 258  |
| 1956        | 642   | 302  |
| 1957        | 550   | 320  |
| 1958        | 504   | 316  |
| 1959        | 540   | 329  |
| 1960        | 468   | 294  |
| 1961        | 343   | 237  |
| 1962        | 360   | 239  |
| 1963        | 362   | 245  |
| 1964        | 390   | 250  |
| 1965        | 393   | 250  |
| 1966        | 440   | 266  |
| 1967        | 444   | 260  |
| 1968        | 500   | 283  |
| 1969        | 510   | 310  |
| 1970        | 430   | 276  |
| 1971        | 495   | 278  |
| 1972        | 535   | 375  |
| 1973        | 585   | 448  |
| 1974        | 545   | 425  |

Source: Boating Industry Association, Chicago, Illinois.

- C. Marex and NAEBM. "Boating: A Statistical Report on America's Top Family Sport." Chicago: Marex and NAEBM, 1971-74.
- D. Boat and Motor Dealer Magazine. "The Boating Market: 1974." Chicago, Boat and Motor Dealer Magazine, 1975.

## 1.5 Recommended Selected Readings

- Clawson, M. and J. L. Knetsch. Economics of Outdoor Recreation. Baltimore: The Johns Hopkins Press, 1966, pp. 1 - 36.

(The "classic text" dealing with outdoor recreation economics. In addition to raising policy issues, the authors provide methods for the analysis of outdoor recreation demand.)

- U. S. Bureau of Outdoor Recreation. The 1970 Survey of Outdoor Recreation Activities. Washington, D. C.: U. S. Government Printing Office, 1972.

(This report updates previous BOR and ORRRC figures on participation in outdoor recreation activities.)

- U. S. Coast Guard. "Boating Statistics." Report released annually under the authority of the Federal Boat Safety Act of 1971 and the Secretary of Transportation.

( In addition to data on boating accidents, this report provides comprehensive and regional perspectives on number and types of boats registered by the states. )

- U. S. Outdoor Recreation Resources Review Commission. National Recreation Survey, Study Report No. 19. Washington, D. C.: U. S. Government Printing Office, 1962.

(Contains the tabular results and analysis of a nationwide survey of the outdoor recreation habits and preferences of the American people 12 years of age and over. Data is derived from four regional samples, each involving approximately 4,000 interviews.)

- U. S. Outdoor Recreation Resources Review Commission. Outdoor Recreation for America. Washington, D. C.: U. S. Government Printing Office, 1962.

(Provides an introduction to the report of the Outdoor Recreation Resources Review Commission and Summary of Recommendations. Chapters 2 (Demand) and 13 (Water - A Key Element) are of particular importance. )

SECTION 2

FEDERAL RESPONSIBILITIES





## 2. FEDERAL RESPONSIBILITIES

The following discussion provides a summary of major Federal recreational responsibilities in the coastal zone by agency. Included are legal obligations, current activities, judicial rulings related to agency responsibilities and other pertinent information. Any such generalized survey treatment inevitably spawns some omissions. Those agencies included were selected largely on the basis of direct responsibilities for managing recreational areas; the degree of financial or technical assistance available; the extent of agency holdings in the coastal zone that support, or have the potential to support recreational activities; and the amount of recreational expertise possessed by the agency. This section provides an introduction to the myriad of Federal agencies and programs, and a basis for productive interaction between Federal, state, and local Officials.

### 2.1 Coastal Zone Management Act and Supporting Regulations

The Coastal Zone Management Act of 1972 (16 U.S.C. 1451) authorizes the Secretary of Commerce to provide grants-in-aid to coastal states to encourage the establishment of management programs for uses of land and water in coastal areas, and to require consistency of Federal programs with approved state plans. The CZM Act is administered by the Office of Coastal Zone Management (OCZM), National Oceanic and Atmospheric Administration.

#### 2.1A Congressional Findings

As background justification for the Coastal Zone Management Act, Congress made several findings relative to the provision of recreation opportunity (underlining is provided for emphasis):

1. "The coastal zone is rich in a variety of natural, commercial, recreational, industrial and esthetic resources of immediate and potential value to the present and future well-being of the nation
2. "The increasing and competing demands upon the lands and waters of our coastal zone occasioned by population growth and economic development, including requirements for industry, commerce, residential development, recreation, extraction of mineral resources and fossil fuels, transportation and navigation, waste disposal... have resulted in the loss

of living marine resources, wildlife, nutrient-rich areas, permanent and adverse changes to ecological systems, decreasing open space for public use and shoreline erosion."

3. "The coastal zone and the fish, shellfish, other living marine resources, and wildlife therein, are ecologically fragile and consequently extremely vulnerable to destruction by man's alterations;" (fish and wildlife are an essential part of many forms of outdoor recreation).
4. "Special natural and scenic characteristics are being damaged by ill-planned development that threatens these values;" (again, natural and scenic characteristics are usually the focus of much vacation travel, pleasure driving and walking).

## 2.1B National Policies

Though recreation is not specifically mentioned in the CZM Act Declaration of Policy, its value is implied through the mention of other resource values essential to recreation activity and opportunity. It is therefore important that Congress placed such emphasis on the need "to preserve, protect, develop, and where possible, to restore or enhance, the resources of the nation's coastal zone."<sup>4</sup>

"Full planning and management consideration must be given to ecological, cultural, historic and esthetic values, as well as to needs for economic development."<sup>5</sup>

The states are the focal point in coastal zone management as they are in statewide recreation resource planning and acquisition under the Land and Water Conservation Fund Act (LAWCON).

## 2.1C Management Program Requirements

Section 305 of the CZM Act authorizes annual grants to any coastal state for the purpose of assisting the state in the development of a management program for the land and water resources of its coastal zone (development grant).

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<sup>4</sup> CZM Act (16 U.S.C. 1451), Sec 303.

<sup>5</sup> Ibid.



Section 305 provides guidance as to what should be included in a management program; specifically, six elements are required in the central development of a state coastal zone management program. While all six are pertinent to management of recreation as a coastal use, some are especially relevant.

1. Boundaries of the coastal zone subject to management program must be identified.

While boundary decisions are made more broadly than any single use, several points relevant to recreation should be made. The area most heavily utilized for recreation is the land/water interface rather than any area extending to the outer limit of the U.S. Territorial Sea. Most coastal recreation takes place in the narrow band (how narrow is not known for sure) directly adjacent to the coastal shorelands. On the other hand, this coastal strip is utilized extensively (with consequent impacts) by individuals other than coastal zone residents: citizens of the state at large, and transient out-of-state tourists. The inter-regional and interstate commerce aspects of coastal zone recreation make planning and management more difficult.

2. Permissible land and water uses within the coastal zone having a direct and significant impact on coastal water need to be defined.

In determining permissible uses, states should give consideration to the requirements of recreation along with many other coastal zone uses mentioned specifically in the Act. Broad scale analyses of environmental and economic impact of uses are essential to any determination of "permissible." Some of the factors involved in this determination include location, magnitude, the nature of impact upon existing natural or man-made environments; economic, commercial and other "triggering" impacts; and land and water uses of regional benefit. Presumably, this analysis would be preliminary 1) to any development of use priorities within the coastal zone; and 2) to a focus upon specific use elements in the coastal zone management plan to the exclusion of others.

3. The management program must include an inventory and designation of areas of particular concern.

Utilizing this baseline inventory of the state's coastal zone resources, critical resources (regardless of whether previously designated as critical or not) need to be identified. Potential here appears to count as much as whether the area has already been previously recognized as critical and is managed accordingly by a state or Federal agency. Critical recreation areas would include 1) areas of unique or fragile natural habitat, physical features, historical significance, cultural value and scenic importance; (examples would include wildlife sanctuaries, potential wilderness areas or historic sites, archeological sites); 2) areas of high natural productivity or essential habitat for living resources; (examples would include present or potential state and Federal wildlife refuges, state fish and game lands); 3) areas of substantial recreational value and/or opportunity; (examples would include presently designated or potential local, state or Federal park areas); 4) areas where developments and facilities are dependent upon utilization or access to coastal waters; 5) areas of urban concentration where coastal uses are highly competitive; and 6) areas needed to protect, maintain or replenish coastal lands or resources including flood plains, beaches, dunes, reefs, beaches and mangrove stands.

Inventory and designation of critical areas will be of assistance to meeting the requirements of Section 306(c)(9) of the Act which requires the management program to "make provision for procedures whereby specific areas may be designated for the purpose of preserving or restoring them for their conservation, recreational, ecological, or esthetic values."

4. The management program must identify the means by which the state proposes to exert control over coastal zone land and water uses.

It must be demonstrated that state powers and authorities are sufficient to exercise a means of control over single uses as well as the resultant coastal zone mix. This provision is intended to

have the state make a comprehensive analysis of its coastal zone authority and to propose new legislation if necessary.

5. The management program must include broad guidelines on priority of uses in particular areas including specifically those uses of lowest priority.

This required element should be built upon the state's findings and conclusions reached concerning "permissible uses" and areas of particular concern. These decisions should assist the state in establishing preferred uses tailored to specific areas in its coastal zone.

6. The management program must include a description of the organizational structure proposed to implement the management program.

## 2.1D Program Approval Requirements

Once a coastal state has developed a management program, it is submitted to the Secretary of Commerce for approval, and if approved, the state is then eligible under Section 306 to receive annual grants for administering its management program (administrative grants).

From Congressional Committee Reports associated with the passage of the CZM Act, it is clear that Congress intended management programs to be comprehensive and that a state must consider all subject areas which are pertinent to the particular circumstances which prevail in the state. Coastal Zone Management Program Administrative Grant regulations (15 C.F.R. 923.4) adopted under Section 306 include among 16 representative elements the following: 1) estuarine habitats of fish, shellfish and wildlife; 2) housing requirements (presumably including second homes and condominiums; 3) recreation, including beaches, parks, wildlife preserves, sport fishing, swimming and pleasure boating; and 4) open space, including educational and natural preserves, scenic beauty, and public access, both visual and physical, to coastlines and coastal estuarine areas. Nowhere in the rules does it state that a state must develop an element or elements for those specific and interrelated areas, but simply that these

and other considerations should be considered. Some states, because of the recognized importance of coastal recreation and related economic impacts, will choose to develop a recreation element as part of their management plan. This technical information paper provides an overview designed to assist any state's coastal recreation planning and management approach and is particularly tailored to aiding the development of recreation elements in state CZM programs.

In assessing programs submitted for approval, the Secretary, in consultation with other concerned Federal agencies, will examine such programs to determine that the full range of public problems and issues affecting the coastal zone have been identified and considered. As part of this identification and consideration process, the states are encouraged to develop objectives toward which progress can be measured, and program submissions will be reviewed accordingly. While many coastal zone management objectives are as yet unquantifiable, recreation objectives in terms of recreation resource needs (the difference between recreation demand and recreation resource supply) are possible. This will be dealt with further in Section 4.

In establishing permissible land and water uses, "the state shall develop and apply procedures for the following (at a minimum):

1. a method for relating various specific land and water uses to impact upon coastal waters, including utilization of an operational definition of "direct and significant impact;"
2. an inventory of natural and man-made coastal resources;
3. an analysis or establishment of a method for analysis of the capability and suitability for each type of resource and application to existing, projected or potential uses;



4. an analysis or establishment of a method for analysis of the environmental impact of reasonable resource utilizations."<sup>6</sup>

Priorities of uses need to be based upon an analysis of state and local needs. "Such priority guidelines will be the core of a successful management program since they will provide a framework within which the state, its agencies, local governments and regional bodies can deal with specific proposals for development activities in various areas of the coastal zone."<sup>7</sup> The management program needs to analyze state needs which can be met most effectively and efficiently through use of the coastal zone and needs to determine the capability and suitability of meeting these needs in specific locations in the coastal zone. Beyond local and state interests, the national interest must be considered in priority setting. The management program shall provide for "adequate consideration of the national interest involved in the siting of facilities necessary to meet requirements which are other than local in nature."<sup>8</sup> This would include the national interest in recreation, parks and conservation as articulated by the National Park Service, Bureau of Outdoor Recreation, Fish and Wildlife Service, U.S. Army Corps of Engineers, National Marine Fisheries Service and U.S. Forest Service.

This "requirement should not be construed as compelling the states to propose a program which accommodates certain types of facilities but to assure that such national concerns are included at an early stage in the states planning activities and that such facilities not be arbitrarily excluded or unreasonably restricted in the management program without good and sufficient reasons."<sup>9</sup>

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6 Coastal Zone Management Program Administrative Grant Program Regulations (15C.F.R. 923.12a).

7 Ibid., (15 C.F.R. 923.14a)

8 CZM Act (16 U.S.C. 1451), Sec. 306(c)(8).

9 Coastal Zone Management Program Administrative Grant Program Regulations (15 C.F.R. 923.15a).

The management plan must further show evidence that the state "has developed and applied standards and criteria for the designation of areas of conservation, recreational, ecological, or esthetic values for the purpose of preserving and restoring them." <sup>10</sup>

Further, the management program must indicate that the state has developed and applied a method for determining uses of regional benefit, and that it has established a method for assuring that local land and water use controls in the coastal zone do not unreasonably or arbitrarily restrict or exclude those uses of regional benefit.

## 2.1E Coordination Requirements

"Each state will have to develop its own methods for accommodating, as appropriate, the varying, often conflicting interests of local governments, water and air pollution control agencies, regional agencies, other state agencies and bodies, interstate organizations, commissions and compacts, the Federal government and interested private bodies." The state needs to recognize the full array of interests involved in coastal zone management matters, provide these interests with an opportunity for participation and continuing consultation and cooperation. The relationship between recreation as a part of coastal zone management and state comprehensive outdoor recreation resource planning (with land acquisition and technical assistance) needs to be clearly established if coastal recreation needs are to be met effectively. This will be discussed in greater detail in Section 5.9.

## 2.1F Estuarine Sanctuaries

Under Section 312 of the CZM Act, the Secretary of Commerce is authorized to make available to coastal states grants of up to 50 percent of the costs of acquisition, development and operation of estuarine sanctuaries for the purpose of creating natural field laboratories to gather data and make studies of the natural and human processes occurring within the

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<sup>10</sup> Ibid., (15 C.F.R. 923.16a)

estuaries of the coastal zone. Subsequent rulemaking<sup>11</sup> notes that the sanctuary program was not intended to duplicate existing broad purpose Federal preservation programs, such as might be accommodated by use of the Land and Water Conservation Fund Act. Instead this program seeks to preserve representative estuarine areas for long-term research and educational uses. Scientific and educational uses to be permitted include baseline studies for use in understanding natural ecological systems, for control purposes, and as interpretive centers for educational purposes. Any use, research or otherwise, which would destroy or detract from the natural system would be inappropriate under this program. This is discussed further with examples in Section 5.9B.

## 2.2 Marine Protection, Research and Sanctuaries Act of 1972

Title III of this Act (16 U.S.C. 1434, 86 Stat. 1061) recognizes a national need to preserve and/or restore marine areas, and consequently authorizes the Secretary of Commerce to create a system of marine sanctuaries in U.S. coastal waters ranging the outer edge of the Continental Shelf to the inland limit of tidal ebb and flow.

According to subsequent program guidelines<sup>12</sup>, sanctuaries may be created for purposes ranging from research preserves to public recreation areas. Further, all marine sanctuaries are to be multiple use areas to the extent consistent with the primary purpose for their creation. As multiple use areas, marine sanctuaries will be subject to varying degrees of public use and will require effective management if preservation and restoration objectives are to be realized. Nominations of areas as marine sanctuaries may be made by states, local governments, organizations, industry and individuals as well as by the Federal government.

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11 Estuarine Sanctuary Guidelines (15 C.F.R. 921.3)

12 Marine Sanctuary Guidelines (15 C.F.R. 922)



## 2.3 Other Federal Responsibilities

### 2.3A U.S. Department of the Interior

The Department of the Interior contains several agencies with major responsibilities for land and water resource management in the coastal zone, including the National Park Service, U.S. Fish and Wildlife Service, Bureau of Reclamation, and Bureau of Indian Affairs. In addition, the Bureau of Outdoor Recreation has a far-reaching role in coastal recreation, through its myriad of planning, coordination, and technical and financial assistance activities. The Department of the Interior possesses the greatest experience in recreational resource management of any Federal department.

#### 1. Bureau of Outdoor Recreation

Under the Land and Water Conservation (LAWCON) Fund Act of 1965, (16 U.S.C. 460, 78 Stat. 897) the Bureau of Outdoor Recreation administers a program of financial assistance grants to states for facilitating outdoor recreation planning, acquisition and developmental activities. Under LAWCON each state must prepare a State Comprehensive Outdoor Recreation Plan (SCORP) to qualify for funding assistance. Each state has a LAWCON liaison officer to coordinate state/Federal relations.

The Bureau also prepares and maintains a continuous inventory of outdoor recreation needs and resources of the United States, maintains a system for classification of outdoor recreation resources, formulates and maintains a comprehensive nationwide outdoor recreation plan and provides technical assistance to states, political subdivisions and private interests. The Bureau provides technical and funding assistance, but has no resource management authority.

#### 2. National Park Service

The National Park Service (NPS) represents a key land managing agency in the coastal zone. Nationwide, NPS administers a system of some 300 units, comprised

of national parks, monuments, historic sites, recreation areas, lakeshores, seashores, preserves, battlefields, and military parks.

The Park Service is charged with a dual, at times conflicting, mission of: (1) preserving the nation's natural, cultural and scenic wonders, while simultaneously (2) providing for public enjoyment derived through recreational use of these resources. NPS administered areas are generally established only where resources meet stringent requirements for uniqueness and national significance, and as a consequence, are seldom located where public needs are most intense.<sup>1</sup> In addition, NPS policies de-emphasizing facility development in many types of park system units, and focusing greater attention upon preservation efforts have evolved in response to increasing use pressures and resultant resource degradation at heavily visited sites.

NPS has, however, undertaken projects in recent years that are distinctly oriented toward satisfying urban recreational needs. The Gateway and Golden Gate National Recreation Areas established in the New York and San Francisco metropolitan regions during 1972 represent the foremost examples of National Park service units established for urban recreational users in a coastal setting.

A 1935 National Park Service survey of undeveloped seashore areas recommended that 12 major sites, with a combined shoreline frontage of 439 miles, be preserved as national seashores. This investigation led to the creation of Cape Hatteras National Seashore in 1937. NPS conducted another survey in 1954 to determine the remaining opportunities to preserve outstanding stretches of the Atlantic and Gulf Coasts<sup>2</sup>. Subsequently, nine national seashores and four national lakeshores distributed throughout the country's ocean and Great Lakes coastline have been established. These units have been complemented by the designation of several national parks, monuments, and other units with coastal frontages.

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1 Clayne Jensen. Outdoor Recreation in America. Burgess Publishing Co. Minneapolis, Minn. 1973 (Second Edition).

2 National Park Service. A Report on the Seashore Recreation Area Survey of the Atlantic and Gulf Coasts. U.S. Dept. of the Interior. 1955.

The establishment of national parks, seashores, and lakeshores requires special legislation to provide for purchasing privately held lands. This requirement complicates planning for the creation of new areas due to the uncertainties inherent in dependence upon enabling legislation from the Congress.

In addition to its direct land managing responsibilities, NPS administers several specialized historic, archaeologic, and educational programs, and conducts research in managing natural areas, including coastal environments. The agency's National Historic Landmarks Program includes a survey of historic sites and buildings to identify those of national significance, evaluation of potential landmarks by the Advisory Board on National Parks, Historic Sites, Buildings and Monuments, and procedures for designating National Historic Landmarks.

All properties eligible for designation as national historic landmarks, as well as historical areas in the national park system, qualify automatically for inclusion in the National Register of Historic Places, a compilation of districts, sites, structures, and objects significant in American history, architecture, archaeology, and culture. The National Register, which is maintained by NPS, is published biennially, with pertinent information concerning each entry. Sites of state or local significance may be nominated by the respective states, and are placed on the National Register with NPS approval.

A State Liaison Officer appointed by the Governor supervises state historic programs. Historic properties are identified in a statewide survey, and reviewed by a professional committee. If the property in question meets Federally prescribed criteria, the committee may recommend it for nomination to the National Register. Additions to the National Register are printed monthly in the Federal Register, and an annual revision composed of monthly supplements may be obtained from the U.S. Government Printing Office.

The National Historic Preservation Act of 1966 (16 U.S.C. 470, 80 Stat. 915) authorizes Federal matching grants to the states, and to the National Trust for Historic Preservation. These grants may be used for statewide surveys, the preparation of statewide historic preservation plans, and the acquisition and restoration of individual projects. Individual preservation projects of other eligible public or private recipients may also be funded through the states if they meet the following requirements:

- the project's inclusion in the National Register;
- consistency with a statewide historic preservation plan approved by the Secretary of the Interior; and
- need for financial assistance; or
- ownership by the National Trust for Historic Preservation.

The State Liaison Officer directs the state's grant-in-aid program historical surveys, and preservation planning; this individual should be contacted for questions concerning a state's historic preservation program.

The National Historic Preservation Act of 1966 also created an Advisory Council on Historic Preservation, and authorized it to comment upon all undertakings, prior to their approval, licensed, assisted, or carried out by the Federal government that have an effect upon properties in the National Register. While this, in combination with applicable provisions in the National Environmental Policy Act (42 U.S.C. 4331) and resultant regulations, affords some measure of protection, important classes of projects with the potential to generate adverse effects are omitted in the application of these two laws.

The Natural Landmarks Program, also administered by NPS, was created to facilitate identification and registration of national landmarks, and to encourage the preservation of nationally significant properties, regardless of ownership. NPS has conducted an inventory of the country's natural areas in conjunction with this program. The system of natural landmarks is designed to illustrate the diversity of the nation's natural environment.



Following NPS evaluation, sites which appear to qualify for inclusion are submitted to the Advisory Board on National Parks, Historic Sites, Buildings and Monuments for its recommendations to the Secretary of the Interior concerning their eligibility for registration. In requesting registration, property owners agree to comply with basic management and protection practices prescribed by the program.

NPS also holds major Federal responsibilities for archaeological research and protection. The agency conducts a program of salvage archaeology where highway construction, dams, pipelines, and other Federal projects threaten antiquities. Although substantial archaeological fieldwork is conducted under the NPS' historic preservation programs, archaeological protection efforts are largely restricted to certain types of actions, and often do not apply to various projects which have a potential to adversely affect these resources.

### 3. U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service is charged with conserving and enhancing fish and wildlife populations, and particularly migratory birds, and threatened and endangered animal species. With responsibility for administering the National Wildlife Refuge System, the Fish and Wildlife Service represents another key Department of the Interior land and water resource managing agency. The refuge system, comprised of some 370 units covering 32 million acres, supports an estimated total of 20 million annual recreational visits.<sup>3</sup> Public recreation is permitted in wildlife refuge areas as an appropriate incidental or secondary use, if the recreational activities pursued are consistent with the primary (fish and wildlife preservation) objectives for which each particular area was established (50 C.F.R. 108). Priority is afforded to recreational uses directly associated with wildlife and its habitat. These include sightseeing, nature observation and photography, interpretive centers and exhibits, fishing and boating, and other similar activities (50 C.F.R. 28). The Fish and Wildlife Service manages a national system of fish hatcheries.

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3 U.S. Fish and Wildlife Service. "The National Wildlife Refuge System." U.S. Dept. of the Interior. 1975.

Fish and game management responsibilities are largely delegated to the states, and to assist them, the Fish and Wildlife Service administers Federal aid fish and wildlife restoration programs, as provided for in the Dingell-Johnson (16 U.S.C. 777) and Pittman-Robertson (16 U.S.C. 669) Acts, with grants awarded on a matching basis.

The National Wildlife Refuge System contains the largest Federal estuarine wetlands holdings. While recreational use of the National Wildlife Refuge System has steadily increased, the fact that this is only a secondary function limits the role of refuges in meeting recreational needs for two principal reasons: (1) incompatible and/or excessive recreational usage in some units has necessitated restrictions as a result of environmental degradation; and (2) fish and wildlife purposes claim first priority in allocating funds, thereby limiting the amount of monies available to provide recreational opportunities, and manage recreational use.

Conflicts arising from heavy recreational use of wildlife refuge areas received national attention in the recent Back Bay National Wildlife Refuge controversy near the Virginia-North Carolina coastal border. A group of Atlantic Ocean beachfront property owners brought suit attempting to overturn traffic restrictions which banned driving along most of the refuge's beach. The Fourth U.S. Circuit Court of Appeals upheld the Department of the Interior's right to enforce severe public access restrictions in attempting to prevent ecological damage, which in this instance, was rendered by dune buggies and four-wheel drive trucks driving along the shore. While the court decision applies only to Back Bay Wildlife Refuge, it reinforces use restrictions for preservation purposes throughout the national system.<sup>4</sup>

Growing costs associated with managing recreational activities in wildlife refuges may present a more pernicious, if less publicized, constraint on the use of these areas. The Migratory Bird Hunting Stamp Act (16 U.S.C. 718) provides revenues for purchasing refuge and waterfowl production areas, but not for their maintenance and operation. The support of recreational activities in the wildlife refuge system is contingent upon continued adequate levels of funding.

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<sup>4</sup> McAllister, William. "Access Ban at Wildlife Area Upheld." The Washington Post. July 10, 1975. p. A-1.



Another key Fish and Wildlife Service area of responsibility concerns the evaluation of fish and wildlife impacts associated with Federal projects, as mandated in the Fish and Wildlife Coordination Act of 1958 (16 U.S.C. 661). Federal agencies are required to consult with the Fish and Wildlife Service, and with its state counterpart to develop, modify or control, or to issue Federal licenses to any public or private agency to develop, modify, or control the waters of any stream or any other body of water for any purpose<sup>5</sup>.

This function has assumed growing significance with the growth in permit jurisdiction and changing environmental posture of the Corps of Engineers, and with the passage and implementation of the National Environmental Policy Act (42 U.S.C. 4331). These project review powers have allowed expanded protection of fish and wildlife habitat that is of direct or indirect significance to recreation.

#### 4. Bureau of Land Management

As part of its responsibilities for managing some 450 million acres of Federal land reserve, the Department of the Interior's Bureau of Land Management (BLM) supports recreation that is compatible with the agency's land stewardship objectives. Recreational use of the vast public domain has increased substantially in recent years, as BLM has assumed a more active role in meeting outdoor recreational needs.

The direct significance of BLM's recreational activities in the coastal zone is limited, however, by the distribution of the agency's holdings. BLM lands are almost entirely in the western states, and a great preponderance of these lands are found at inland locations. Those BLM holdings that do lie within the coastal zone, nonetheless, often possess substantial potential for an expanded role in recreation. The King Range National Conservation Area, the first BLM unit of its kind, was authorized by the King Range Act (16 U.S.C. 460Y, 86 Stat. 1067). This 54,000 acre area, located along the northern California coast, has been divided into management zones, with recreation representing the paramount

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<sup>5</sup> Nathaniel Reed. "Living Marine Resource Conservation." The Coastal Imperative: Developing a National Perspective for Coastal Decision Making. National Ocean Policy Study. U.S. Senate Committee on Commerce. Sept. 1974.

use for much of the unit. BLM holdings are managed within an overall multiple objectives framework.

In addition to its responsibilities for land management, BLM is also concerned with identification and protection of undersea antiquities and cultural resources, as well as ecological resources, undertaken in conjunction with outer continental shelf oil and gas leasing. A provision of the Outer Continental Shelf Lands Act (43 U.S.C. 1331) allows withdrawal from disposition of unleased lands of the Outer Continental Shelf. Areas already withdrawn under this provision include the Key Largo Coral Reef Preserve, off the coast of Florida, and the Santa Barbara Ecological Preserve and Buffer Zone off the California shore<sup>6</sup>. The Key Largo site has been proposed as a marine sanctuary, under Title III of the Marine Protection, Research and Sanctuaries Act of 1972 (16 U.S.C. 1434, 86 Stat. 1061).

BLM maintains an inventory system that provides statistics on the use of public lands for recreation and wildlife purposes, including data on visitor use of established and potential recreation sites, as well as lands or sites leased to non-Federal interests for recreation purposes<sup>7</sup>.

## 2.3B U. S. Department of Defense

The U.S. Army Corps of Engineers' broad responsibilities in the coastal zone substantially influence recreational activities there. Other Defense agencies hold significant coastal acreages, but public access for recreational use is often restricted. Defense lands and waters in many locations comprise, however, a potential reserve for future recreational use since military requirements and priorities change over time.

### 1. U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers possesses a diverse and expanding array of responsibilities which relate to coastal recreation in both a direct and indirect fashion. As the interpretation of Federal navigation interests has grown, the scope of the Corps' recreational involvement has broadened as well.

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<sup>6</sup> Maurice P. Lynch, Martha A. Patton, & Theodore F. Smolen. "A Policy Study of Marine & Estuarine Sanctuaries: Background Information." Marine & Estuarine Sanctuaries: Proceedings of the National Workshop on Sanctuaries. Scientific Report No. 70. Virginia Institute of Marine Science. pp. 3-56 Feb., 1974

<sup>7</sup> Bureau of Land Management. Public Land Statistics - 1973. U.S. Dept. of Interior. U.S. Govt. Printing Office. 1974.

The Corps is vested with continuing authority to plan and construct certain flood control, navigation and beach erosion and shore protection projects; undertake water supply projects; prepare flood plain information studies; engage in emergency flood control and flood damage rehabilitation work; and holds permit review authority for a wide range of activities in navigable waters and wetlands.

Recreation generally represents only a single component of multi-objective projects, but benefits derived from recreation have played an increasing role in the justification of Corps programs. Federal participation in beach and shore stabilization projects, for instance, is often justified principally by public recreational use<sup>8</sup>.

Recreational use of Corps facilities has shown a dramatic increase since World War II, with annual visitation now exceeding 300 million recreation days<sup>9</sup>. More recreationists now visit Corps outdoor recreation facilities than those of any other Federal agency, and the rate of increase during the past two decades has exceeded that of any other Federal agency.

While a majority of these visits are recorded at inland reservoir project sites, the Corps plays a major role in supporting coastal recreational activities. This role ranges from small boat harbor projects and beach restoration measures, which facilitate recreational activities directly, to broad research and permitting authorities, which may preserve or enhance recreational resources and pursuits in an indirect fashion. Corps programs are carried out through nine coastal and Great Lakes division offices, 20 operating offices, and five major research facilities, including the Coastal Engineering Research Center (CERC).

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8 Office of Science and Technology. The Federal Ocean Program. The Annual Report of the President to the Congress on the Nation's Efforts to Comprehend, Conserve, & Use the Sea. April, 1973.

9 U.S. Army Corps of Engineers. Recreation Statistics. 1973.



The River and Harbor Act of 1968 (33 U.S.C. 426) gave the Corps responsibilities for appraising, investigating and studying the condition of the nation's shorelines, and for developing suitable means for protecting, restoring and managing them so as to minimize erosion induced damages. This legislative charge resulted in a National Shoreline Study, completed in 1971, which inventoried and evaluated 84,000 miles of U.S. ocean and Great Lakes shoreline. While this study probably represents the most comprehensive analysis of shoreline conditions in the U.S. produced to date, a report by the Comptroller General of the U.S. <sup>10</sup> claims that the Corps' investigation contained inaccuracies in the assessment of shoreline erosion in the nation. The Comptroller General's report identifies limited and inadequately defined criteria for classifying erosion conditions, and a lack of uniform methodology among Corps district offices investigated as the study's underlying problems. Among the difficulties encountered in attempting to carry out the Corps' erosion control program revealed by the Comptroller General's report was the requirement that public access be provided to beaches developed or improved with Federal funds; private property owners along the shoreline within project areas were found to be reluctant to allow public access to beaches.

Not only are Corps-maintained coastal waterways, jetties and related navigation improvements extensive, but the agency has significant additional holdings under its jurisdiction with potentials for expanded recreational use. A reconnaissance level survey was recently conducted for the Portland District, U.S. Army Corps of Engineers to determine the potential for public recreation and conservation use at 11 Oregon and Washington coastal project sites. These sites consisted primarily of jetties and accreted land at the mouths of coastal rivers, and several were identified as already managed for recreational purposes.

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<sup>10</sup> Comptroller General of the U.S. National Efforts to Preserve the Nation's Beaches and Shorelines - A Continuing Problem. Report to Congress. U. S. General Accounting Office. June 11, 1975.

While possible conflicts with navigation were encountered, as were safety hazards associated with public use, the report indicated that in most instances, these constraints could be overcome. The study developed a general planning framework for each site to serve as a basis for detailed master planning (where required) in cooperation with the Oregon and Washington state park and recreation officials. Similar potentials for coordination exist along much of the nation's coastline.

Corps permitting authorities cover construction of structures extending beyond the mean high water mark, including piers and bulkheads and a variety of dredge, fill, disposal and related activities. Corps review authority may apply directly to construction and maintenance of public and private recreational facilities. This regulatory authority, coupled with National Environmental Policy Act review responsibilities, also assists in ensuring that development and related activities are planned and carried out in a fashion that provides adequate protection of areas with recreational values that could be adversely affected.

Interim regulations promulgated pursuant to section 404 of the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251) extend Corps permit jurisdiction beyond traditional navigable water boundaries. A phased program for implementation has been proposed, with contiguous coastal wetlands the initial area subject to the revised jurisdiction. Full implementation of section 404 will further refine Corps permit jurisdiction, and will exert a far-reaching influence on development and maintenance activities in wetland and coastal areas.

## 2.3C U.S. Department of Commerce

Department of Commerce involvement in the recreational field reflects the diverse nature of its component agencies. In addition to the responsibilities of the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, the Department's Bureau of the Census provides recreation statistics and the Economic Development Administration may provide financial assistance for capital projects. Further, additional major components of the National Oceanic and Atmospheric Administration are involved: the National Weather Service and National Ocean Survey provide climatic and nautical information that is invaluable to all boaters

and fishermen; the National Sea Grant and Marine Advisory Service Programs provide research and technical assistance for marine recreation; and the National Marine Fisheries Service holds responsibility for managing living marine resources.

## 1. National Marine Fisheries Service

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) is charged with the management of living marine resources, including conservation, development and enhancement of anadromous fisheries. NMFS holds responsibility for dealing with both the commercial and recreational aspects of these marine resources. The agency generally does not provide directly for recreational activities, but rather complements recreational pursuits through its resource management functions.

NMFS provides financial assistance to the states for development, implementation, administration, monitoring and evaluation of fisheries management plans. The agency also establishes national guidelines for managing fisheries.

NMFS sponsors extensive saltwater recreational fishing surveys to more accurately assess numbers of fishermen, the amount of time they spend fishing, their catch, and their expenditures. A survey of 13 Northeastern states and the District of Columbia was completed in April, 1975, and a companion investigation with a spring, 1976 target date for completion has been initiated for eight Southeastern and Gulf states.

Proposals before Congress to extend U.S. fisheries jurisdiction to 200 miles would substantially expand NMFS' responsibilities, though functions related to commercial fisheries would be most significantly affected.

## 2. Office of Sea Grant/Marine Advisory Service

The National Sea Grant Program, now part of the National Oceanic and Atmospheric Administration (NOAA), carries out cooperative programs in the coastal zone



with state and local governments, academic institutions, and industry for the purpose of fostering marine resource development, technology, environmental research, education and training, and advisory services<sup>11</sup>.

The Marine Advisory Service Program, which is designed to facilitate the transfer of information between researchers and users, coordinates the diverse advisory responsibilities of Sea Grant institutions. While the scope and orientation of Sea Grant sponsored research varies substantially, an expanding array of projects are concerned with some aspect of recreation. In addition, a growing cadre of marine recreation specialists has become affiliated with the Marine Advisory Service.

The collective expertise of Sea Grant/Marine Advisory Service affiliates often makes them a valuable resource for research, information and guidance concerning diverse aspects of recreation in the coastal environment.

## 2.3D U.S. Department of Agriculture

Recreation has assumed a role of expanding significance in the U.S. Department of Agriculture's overall operations, particularly in the National Forest System. In addition to the vast recreational opportunities afforded by national forest lands and waters, other agencies such as the Soil Conservation Service, Agricultural Stabilization and Conservation Service, and Extension Service provide technical or financial assistance for recreational purposes.

### 1. U.S. Forest Service

The U.S. Forest Service (USFS) administers the National Forest System, which encompasses over 180 million acres of public land. The extent of this Department of Agriculture component's holdings make it second only to the Bureau of Land Management's. Like BLM, the Forest Service's properties are heavily concentrated in western states and inland areas.

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<sup>11</sup> Office of Science and Technology. The Federal Ocean Program. Annual Report of the President to Congress on the Nation's Effort to Comprehend, Conserve, and Use the Sea. April, 1973.

National forests are managed within a sustained yield, multiple objective framework for outdoor recreation, timber and range production, watershed protection, and fish and wildlife purposes. The national forests support a variety of recreational activities in diverse settings, and receive among the greatest visitation of any Federal areas. Despite this extensive recreational use, a substantial proportion of national forest lands are located in primitive and wilderness settings. Most of the acreage in the National Wilderness Preservation System is located in national forests. USFS, along with the National Park Service, administers National Recreation Areas. A substantial majority of national forest coastal frontage is found in Alaska, though significant shoreline holdings are also located in other West Coast, Great Lakes, and to a lesser extent, Southeastern states.

USFS conducts extensive recreational research, primarily through its forest and range experiment stations, although investigations are rarely undertaken in coastal settings.

While recreation represents a fundamental and expanding use of national forests, it still comprises only one of many which must be accommodated. As a consequence, much of the National Forest System remains unavailable for recreational activities.

## 2. Soil Conservation Service

Several Soil Conservation Service (SCS) programs provide assistance for outdoor recreation, including its District Assistance, Watershed Protection and Flood Prevention, Cropland Conversion, and Technical Assistance Programs<sup>12</sup>. SCS often works directly with individual or groups of property owners, and with local governments. Its programs are predominantly of a rural nature, but have been extended to an increasing number of urban areas. SCS' primary contribution to recreation consists of technical and financial assistance in planning and constructing recreational facilities of a relatively small scale.

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<sup>12</sup> Clayne, Jensen. Outdoor Recreation in America. Burgess Publishing Co. Minneapolis, Minn. 1973 (Second Edition).

## 2.3E U.S. Department of Transportation

While not a land and water resource managing agency, nor one with substantial direct responsibilities for recreation, the U.S. Department of Transportation nevertheless administers several programs with significant ramifications for recreationists. These include Coast Guard programs, especially those for boating safety; the massive Federal aid highway programs administered by the Federal Highway Administration; and public transit assistance programs of the Urban Mass Transportation Administration.

### 1. U.S. Coast Guard

The Coast Guard (USCG) is charged with maintaining the safety of life and property at sea, and with the enforcement of maritime laws and treaties, particularly as they relate to pollution prevention and fisheries conservation<sup>13</sup>. The Coast Guard's primary role with respect to recreation revolves around its public safety mission, which includes search and rescue, aids to navigation, and small boat safety. USCG and its volunteer arm, the Coast Guard Auxiliary, conduct boating safety education and enforcement programs to train private owners in the safe handling of their boats.

Like the Corps of Engineers and other Department of Defense agencies, the Coast Guard has jurisdiction over coastal landholdings that are incidental to primary agency responsibilities. Certain of these areas present potentials for introducing, expanding, or better managing recreational activities.

### 2. Federal Highway Administration

The Federal Highway Administration (FHWA) administers Federal aid highway programs, encompassing a network which includes roughly one-fourth of the nation's road mileage, and carries over two-thirds of all its traffic<sup>14</sup>.

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<sup>13</sup> Office of Science & Technology. The Federal Ocean Program. The Annual Report of the President to the Congress on the Nation's Efforts to Comprehend, Conserve, and Use the Sea. April, 1973.

<sup>14</sup> U.S. Dept. of Transportation. U.S. Dept. of Transportation - Facts & Figures. January, 1973.

A series of policy and procedure memoranda, along with legislative enactments, such as the National Environmental Policy Act, have promoted increased concern for ecological and socioeconomic considerations in transportation planning. This has led to expanded efforts to minimize adverse environmental effects associated with highway projects, including protection of parklands, recreational areas, wildlife and waterfowl refuges, properties of historic and cultural significance, and wetlands and coastal areas.

In addition to changing emphasis in highway planning, and increased attention to the impacts of implementing transportation facility plans, FHWA may, under certain circumstances, provide direct financial assistance for projects, such as bikeways and pedestrian facilities as part of a Federal aid highway project, wherever conditions are favorable and a public need is served. Provisions in the Federal Aid Highway Act of 1973 (23 U.S.C. 217) allow the use of these funds to construct bicycle and pedestrian facilities independent of regular highway projects. The various states are responsible for the administration of funds apportioned each year by FHWA<sup>15</sup>.

## 2.3F Other Federal Agencies

In addition to those agencies already identified, others described in this concluding section are vested responsibilities of import to coastal recreation.

### 1. General Services Administration

The General Services Administration (GSA) develops policies for the maximum utilization of Federally owned excess real and personal property; and directs and coordinates its disposal by sale or conveyance for public purposes, including park and recreational use<sup>16</sup>.

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15 Federal Highway Administration. "Bicycles & Pedistrian Facilities in the Federal Aid Highway Program." U.S. Dept. of Transportation, 1974.

16 John K. Gamman, Shavaun Towers, & Jens Sorenson. Federal Involvement in the California Coastal Zone: A topical Index to Agency Responsibility. Institute of Marine Resources, University of California. Sea Grant Publication No. 29. November, 1974.



The Bureau of Outdoor Recreation provides technical assistance to state and local governments relating to applications for Federal surplus property for public park and recreational purposes. GSA's Disposal of Federal Surplus Real Property Program has allowed conversion of areas formerly devoted solely to military uses to outstanding coastal recreation sites, often accessible to substantial urban populations. Continuing operation of this program represents a promising avenue for expanding public access to potential shoreline recreation areas.

## 2. Water Resources Council

The Water Resources Council (WRC), an independent agency, has broad responsibilities for coordinating water resources planning. WRC recommends the establishment of Federal-state river basin commissions to the President, and reviews plans prepared by these commissions. The Council administers financial aid programs for comprehensive river basin planning, which is coordinated between water and related land resources planning, and statewide recreation planning.

Each river basin commission serves as the principal agency for the coordination of water resources planning in its designated area. The commissions prepare and maintain comprehensive river basin plans, which include recreation, and fish and wildlife resources. Two recent efforts which focus upon coastal areas include the Great Lakes Basin Framework Study conducted by the Great Lakes Basin Commission, and People and the Sound: A Plan for Long Island Sound developed by the New England River Basins Commission. Both of these plans reflect high recreation and open space priorities.

## 3. U.S. Department of Housing and Urban Development

The Department of Housing and Urban Development (HUD) has traditionally been a key agency in the provision of assistance for open space planning and land acquisition. This agency's impact has been especially pronounced in urbanized areas. HUD's categorical grant programs, such as open space and urban beautification have recently been replaced by community development block grants, however. As a result, localities now have greater discretion over how grant funds are to be spent. While financial aid administered by HUD is no longer earmarked for open space, it remains a valid purpose for expending community development funds.



## 2.4 Recommended Selected Readings

- U.S. Bureau of Outdoor Recreation. Outdoor Recreation: A Legacy for America. Nationwide Outdoor Recreation Plan. U.S. Dept. of the Interior. 1971 pp. 32-42.

(Reports on the comprehensive nationwide outdoor recreation plan completed pursuant to P.L. 88-29. The nationwide plan takes into consideration the plans of the various Federal agencies, States and their political subdivisions.)

- U.S. Department of Commerce, National Oceanic and Atmospheric Administration. "Coastal Zone Management Program Development Grants - Notice of Final Rulemaking." In Federal Register, Vol. 38, Number 229, Part V, November 29, 1973.

(Contains guidelines for grants under section 305 of the CZM Act to develop a management program that will meet the requirements of section 306.)

- U.S. Department of Commerce, National Oceanic and Atmospheric Administration. "Estuarine Sanctuary Guidelines." In Federal Register, Vol. 39, Number 108, Part IV, June 4, 1974.

(Contains final regulations describing the procedures for applications to receive grants for estuarine sanctuaries under section 312 of the Act.)

- U.S. Department of Commerce, National Oceanic and Atmospheric Administration. "Part 922 - Marine Sanctuaries." In Federal Register, Vol. 39, Number 125, June 27, 1974.

(Provides guidelines that set forth the specific concepts and procedures under which marine sanctuaries are to be designated and managed.)

- U.S. Department of Commerce, National Oceanic and Atmospheric Administration. "Coastal Zone Management Program Administrative Grants - Notice of Final Rulemaking." In Federal Register, Vol. 40, Number 6, Part I, January 9, 1975.

(Sets forth the criteria and procedures to be utilized in reviewing and approving coastal zone management programs pursuant to section 306 of the CZM Act and procedures by which coastal states may apply to receive administrative grants under section 306 (a) of the CZM Act.)

- U.S. General Services Administration. U.S. Government Organization Manual 1974/75. Washington: U.S. Government Printing Office, revised annually.

(Contains descriptions of the agencies of the legislative, judicial and executive branches of government.)



SECTION 3

MALDISTRIBUTION & MISALLOCATION OF RECREATIONAL  
RESOURCES: A STATEMENT OF THE PROBLEM



### 3. MALDISTRIBUTION AND MISALLOCATION OF RECREATIONAL RESOURCES:

#### A STATEMENT OF THE PROBLEM

##### 3.1 Public Access: A Focus for Coastal Recreation Planning and Management

"The fight for a foothold on Iwo Jima may have been the bloodiest of all, but Martha's Vineyard is no picnic either.... In a soft economy the only safe investment is in a company manufacturing 'No Trespassing' signs . . . and any citizen can use the beach at East Hampton (Long Island) as long as he is willing to leave his car near Times Square and walk the rest of the way<sup>1</sup>."

With these three quotes, Calvin Trillin reflects on sand as real estate and identifies three of the major problems facing recreation resource planners and managers today: 1) peak recreational use periods; 2) the shoreline of most of the United States is in private ownership; and 3) the short supply of existing public shoreland and access areas is near saturation.

From any map, it appears that the mileage of U.S. coastal shoreline should be abundant. A closer look reveals that in terms of effective shoreline and shoreline with public access, this is far from the case. In fact, effective shoreline is a scarce commodity and is being further reduced almost daily by numerous factors.

Of the 60,000 miles of shoreline of the 48 contiguous states, only about one-third is considered suitable for recreation activities. Only 5.5 percent of this recreational shoreline is in public ownership, with 3 percent restricted for military purposes and 91 percent in private ownership. Trillin's reflections on sand as real estate should be more meaningful now. When the total coastal shoreline (not recreational or effective shoreline) of the 48 contiguous states is considered, less than 2 percent is in public ownership<sup>2</sup>.

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1 Calvin Trillin, "U.S. Journal: The Coastline - Some Reflections on Sand as Real Estate." New Yorker Magazine, November 18, 1972, pp. 215-224.

2 Dennis W. Ducsik. Shoreline for the Public. The MIT Press, Cambridge, Massachusetts, 1974, pp. 42-43.



There are regional differences in this national coastline trend. Public ownership of shorelands in the Northeast United States is in very short supply. On the entire Atlantic coast, for that matter, there are only 336 miles of shoreline that are publicly owned for recreation. This is only 3 percent of the recreational shoreline. The shortfall in public shorelands or access is particularly critical within a half day's drive of population centers where, as can be expected, recreation demand is most intense. This shortage of public shorelands and access is further magnified when we realize that 54 percent of the nation's population (excluding Alaska and Hawaii) lives within the 50-mile coastal strip that comprises but 8 percent of the total U.S. land area<sup>3</sup>. It can be expected that this population trend will continue as economic development of the coastal zone continues. The estuarine zone then is nearly twice as densely populated as the rest of the country<sup>4</sup>." In summary, migration to the cities has paralleled the move toward increased private ownership of coastlands. Today, the supply of public shorelands and access is unable to meet public recreation needs. It's unlikely that public resources will shrink further but, more importantly, further efforts need to be made to 1) recognize the public rights to use beach, and 2) further acquire coastal shorelands and access.

There is evidence, according to Dennis Ducsik in his recent book Shoreline for the Public that "the tide is beginning to turn in favor of reclaiming the public interest in the shoreline." Methods and strategies to these ends are presented in Section 5.

### 3.2 Barriers to Recreational Use of the Coastal Zone

Put negatively this section reviews barriers to coastal recreation areas; put positively, the following can be regarded as suitability factors or areas that planning must confront.

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3 U.S. Department of Commerce, Bureau of Census, Statistical Abstract of the United States - 1972, Table 4, 1972, p.6.

4 U.S. Department of the Interior, Federal Water Pollution Control Administration, The National Estuarine Pollution Study, Vol. 1, Part II, November 1969, p. 11.

### 3.2A Natural Barriers

Bluff and marsh areas, while still having recreational potential, rule out many of the most popular water based activities.

The recreational use of many islands is most difficult with financial access being the predominant requisite for use.

The impact of littoral drift, particularly when working in concert with man's use of protective structures, has kept beaches in perpetual and unpredictable lateral movement. It's possible for beaches to move to locations where perpendicular public access is not possible.

Soil erosion caused by adjacent land use practices has led to the filling-in of bays, often making them inaccessible for boating and swimming, and reducing wet-land areas as well.

The extent of tidal fluctuation can tax existing recreation facility development technology and budgets with the result that facility development may not be extensive.

### 3.2B Multiple Use Barriers

It is often difficult to mix coastal uses within a multiple use framework. Impacts of other coastal uses are of two types: 1) direct, and 2) indirect. A direct impact would include the fact that cargo handling and wharf areas traditionally block access to large areas of shoreland; (these areas are usually fenced for security reasons). Additionally, port directors are not keen on having recreational craft and the necessary support facilities mixed in with commercial operations for obvious safety reasons. Indirect impacts would include a plant's impact on water quality (rendering it unfit for many recreation activities) and the impacts of dredging and spoil disposal for navigation and housing construction purposes (further filling bays and reducing fish and wildlife habitat).

Impairment of recreational use may be difficult to assess until reduced local spending associated with recreation is noticed. It is not enough to deal solely with bacterial contamination since the public's recreational use can be shifted by its perception and identification of unacceptable water conditions. Recreation is considerably more vulnerable here than most other coastal uses, as few substantive water quality requirements have been established.

### 3.2C Private Ownership Barriers

As has already been pointed out, most U.S. shoreland is privately owned. Legal access to the coast is therefore impossible in many areas. Even where the public's right to lateral use of beach and shorelands has been recognized, perpendicular access is difficult and expensive to develop.

The recent practice of private land syndication or land banking in which land is held back until artificial land values are induced may have a profound impact on the future of coastal lands. As land is held and sold by one land syndicate to another, the artificial value of the land more than precludes the "highest and best use" from being public park land. As syndication receives wider usage in coastal areas, it will be difficult not to site a plant, industry or resort on coastal parcels because of the high land costs involved. The broad implications of this practice for resource planning and management are as yet undocumented.

### 3.2D Transportation Barriers

There are some public areas that because of highway and other transportation linkages are virtually inaccessible. Sometimes this is by design, and necessary to protect areas from potential overuse.

Transportation problems associated with recreation are multi-faceted, and at times conflicting, reflecting the diverse objectives sought in leisure pursuits. Among these problems are:

- Deficient transportation access - by virtue of a total lack of facilities, or merely too low a capacity - to shoreline sites suitable for supporting recreational activities which could, theoretically, expand coastal recreational opportunities, and relieve use pressures and conflicts at existing sites;

- Highways, railroads        other transportation corridors have, at times, blocked usage of extensive shoreland areas;
- Inadequate or inefficiently located vehicular storage facilities - parking space limitations, for instance, may constrain the use of some sites, while other areas may have potentially valuable resource lands and waters preempted by such facilities;
- A lack of suitable transportation alternatives to private automobile use, including public transit (bus or other means), aquatic access (ferry or private boat), bicycle and pedestrian travel, and multi-modal combinations (e.g. "park-n-ride" shuttle service); and
- Insufficient consideration of recreation and open space values in traditional transportation models, especially with respect to secondary impacts of highway improvements (e.g. enhancement of shoreline land values, stimulation of private development and indirect environmental effects of expanded road access).

Transportation barriers have been the result of over dependence on the auto. The mix of variously-priced means of transportation has been reduced if not eliminated over the years. Gone are excursion boat, train and bus services. The result is that those who can afford to come travel largely by auto, and require parking facilities in the coastal area.

With the increasing cost of gasoline, areas that have been traditionally close-by are now considerably more expensive for many to reach in terms of travel-distance costs. As gasoline and car prices continue to rise, these costs will impose a growing constraint upon recreational travel.

### 3.2E Socio-Economic Barriers

Generally, the low income, less mobile segments of urban society must restrict their recreation activity (due to the alternatively higher travel costs involved) to those areas within or immediately adjacent to urban centers ...



areas where pollution and multiple use impacts are most severe, where areas are fewer in number and of poor quality, and where they are often inaccessible due to overcrowding.

The relative costs of participating in coastal recreation activities may be a barrier to some individuals and groups. While most will be able to afford a swimming or shore fishing experience, many will be unable to purchase experiences which require greater investment, e.g., deep sea or bay fishing, boating, scuba diving, and water skiing. The commercial sector has the capability of reducing some of these barriers and strategies for certain of these are discussed in Section 5.

Age, health and physical ability may also be barriers to participation and use. Facility and site planners are affording these factors greater consideration today through modifications in facility design and construction.

### 3.2F Visual Access Barriers

Not only is most coastal land in private ownership, but this land is being developed. For example, in the Recreation Element recently prepared by the South Coast Regional Commission (California) it was noted that "roughly 20 miles of the 110 mile coast of mainland Orange and Los Angeles Counties have views blocked totally by structures<sup>5</sup>." Traditionally, land values decrease the farther one moves inland with one exception - namely, those parcels of land with a view of the coast or shore. These private values, as well as the more compelling public values, are lost when visual access is blocked. The lack of visual access is particularly critical for the coastal recreation activities . . . their view is their sole tie to the shore and sea.

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5 California State Commission and South Coast Regional Commission. The Recreation Element for the South Coast Region: Draft Regional Element V of the California Coastal Zone Conservation Plan. Preliminary Draft for Discussion. Long Beach: South Coast Regional Commission, 1974, pp. 11-13.



### 3.3 Use Conflicts

An increasing number of recreation participants and activities are competing for a relatively fixed amount of shore areas. With public shoreline access limited, coastal use tends to be concentrated around these access points. Without a comprehensive access system, it is difficult to disperse uses, and hence avoid many conflicts. Many coastal bays and areas are simply too small to support intensive use; many areas like marshlands are unsuited to a wide variety of uses. Length of available shoreline, type of access, and density of development are all involved with use conflicts. Figure 1, drawn from a study of lake development, is illustrative of some of these relationships.

Multiple use conflicts in coastal areas are due to intensity, mixing and incompatibility of uses. Shoreland uses are directly related to the presence and extent of multiple use surface water conflicts. Conflicts involve physical competition for space, psychological incompatibility and destruction of resource-related values. Conflicts, if allowed to continue unmanaged, may result in reduced health and safety, deterioration of environmental and recreation experience qualities and inefficient use of coastal waters.

Examples of conflicting uses are arranged under these problem areas:

#### A. Health and Safety

Boating (bacterial waste) impact on swimming

Boating, Fishing, Waterskiing (potential hazards involving high speed craft) impact on swimming

#### B. Environmental and Recreation Experience Qualities

Boating (speed, wake and noise) impact on fishing

Surfing (interference with lines) impact on fishing

Boating (noise, litter, etc.) impact on shoreland residents and public users

Beach use with car (noise, visual) impact on pedestrian beach use

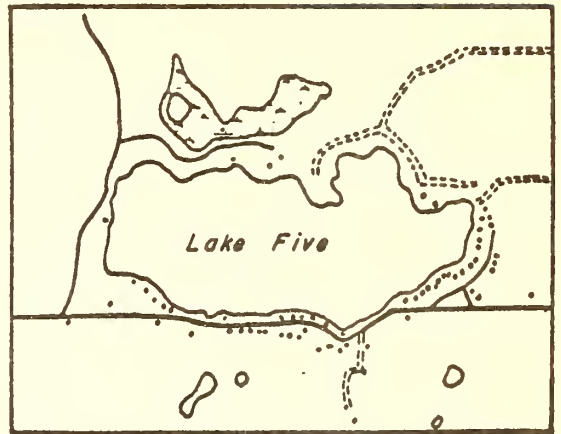
Public shoreland area use (noise, litter, disruption) impact on adjacent private residents

Figure 1

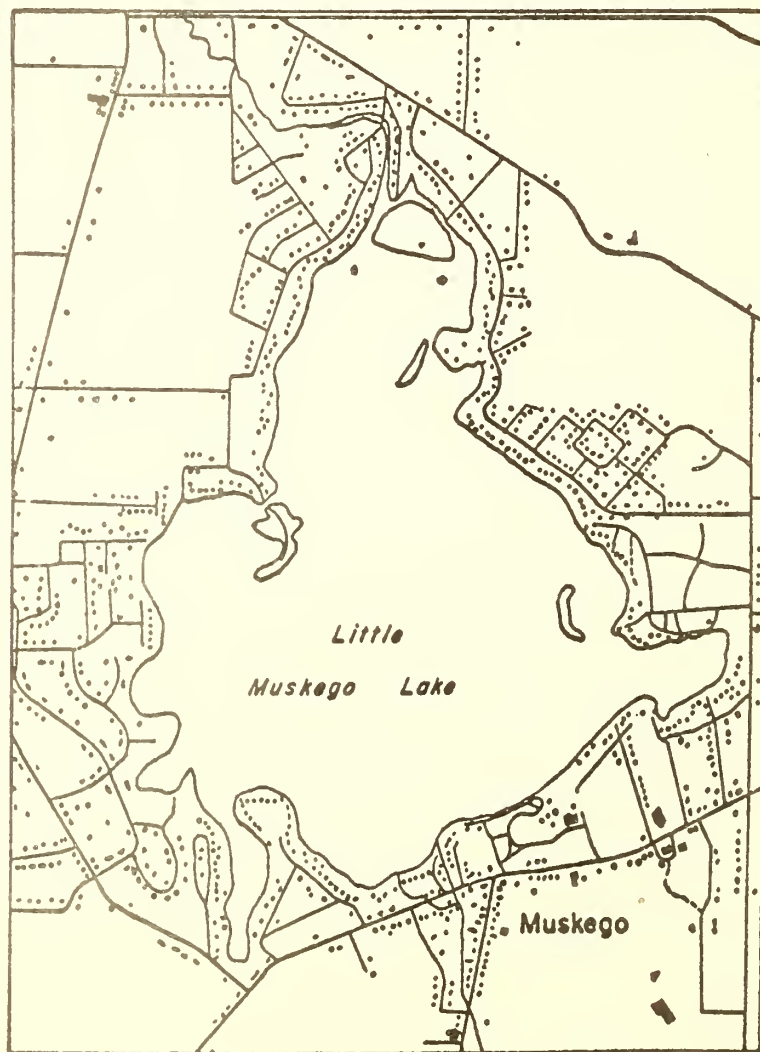
Some Lake Shore Development Patterns



LITTLE DEVELOPMENT



PARTIAL DEVELOPMENT



INTENSE DEVELOPMENT

Source: Zoning for Shoreland Resource Protection.  
J. Kusler, Ph.D. Dissertation, Wis. 1970.

### C. Inefficient Use of Coastal Waters

Waterskiing (large area needed) impact on all other uses

Boating (wake and result shoreline) impact on shoreland properties, erosion damage

Shoreland recreational uses may have direct consequences for water uses. For example, density of shoreline development (second homes and condominiums) is a critical determinant of water use density. Lack of boat launching access may lead to a reduced density and smaller, quiet craft. Beyond density concerns, development of shoreland housing may reduce water quality through erosion, dredging, filling, spoil disposal, and discharge of pollution contaminants, all of which impact on water recreation uses. Docks and fill reduce usable bay surface acreage available. Filling of wetlands and its impact on fish and wildlife impact is widely documented.<sup>6</sup> It is also important to recognize that many water recreation uses have the potential for impacting on shoreland uses. (See Figure 2 for a review of interrelated impacts.)

In addition to the interrelated problems posed by water surface and shoreland recreation activities, there are difficulties in problem identification. Impacts on health and safety can be determined by observation, monitoring water quality, accident trends, etc. Impacts on environmental and recreation experience quality occur according to user preferences. Since there is often little similarity among users, there is little reason to expect preferences or ideas of experience quality to coincide. To identify problems in this area, managers must supplement good common sense and ocular analysis ("eyeballin' it"), with interviews and use of validated questionnaires with participants.

#### 3.4 Peak Use Phenomenon

Most coastal recreation, like other recreation activities, takes place very irregularly in peak use periods because of temperature and climate concerns, and timing of vacation periods. The effective recreation season is made up of mostly weekends and the vacation season (winter or summer depending on U.S. location). Areas that are used to capacity (or beyond) on the weekend may be vacant during the week.

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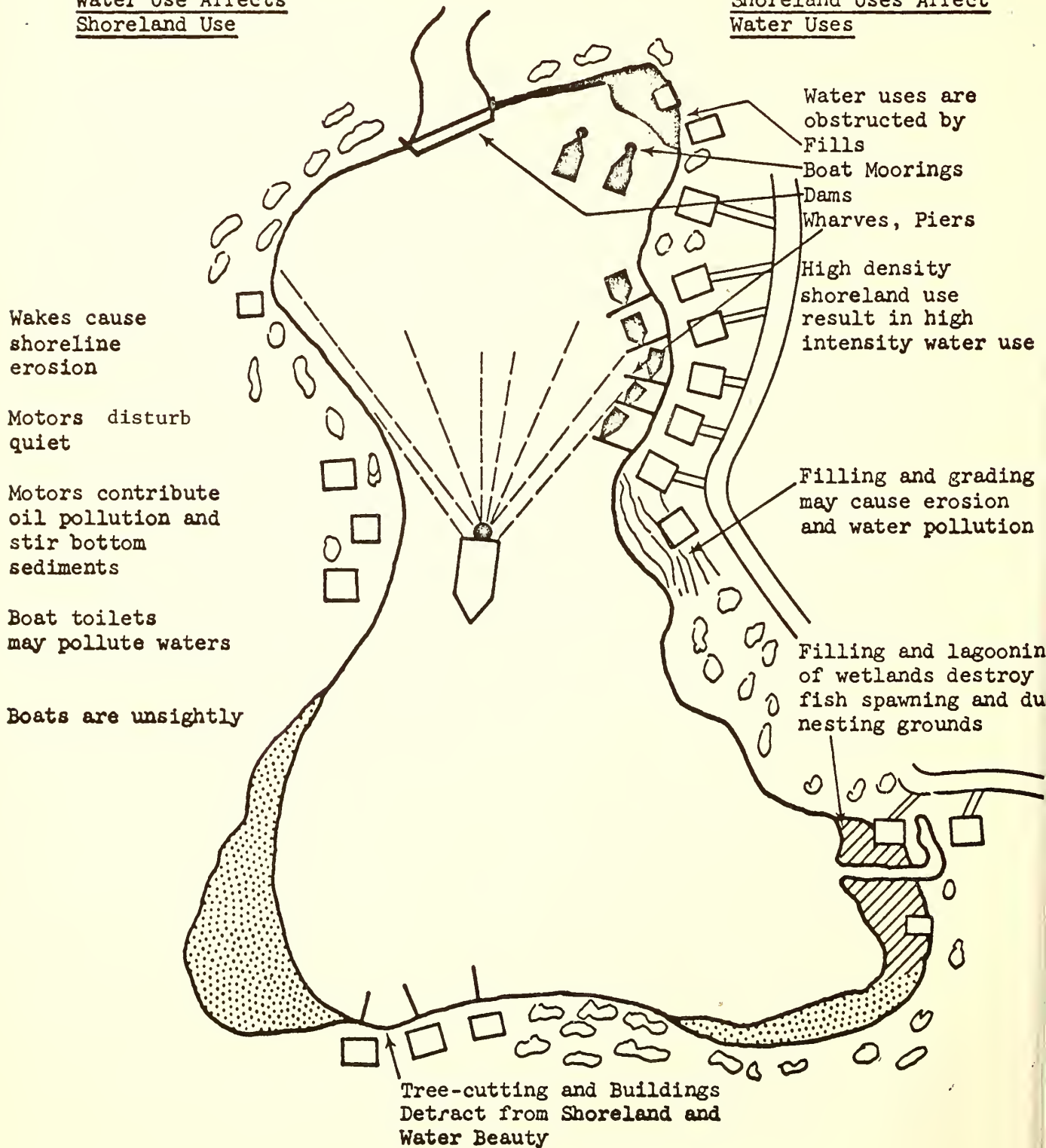
6 U.S. Bureau of Commercial Fisheries. National Estuary Study. Volume 2. U.S. Government Printing Office, Washington, D.C., 1970.

Figure 2

INTERRELATIONSHIP OF WATER AND SHORELAND USES

Water Use Affects  
Shoreland Use

Shoreland Uses Affect  
Water Uses





Because use pressures are greatest at areas within 125 miles of metropolitan centers (with maximum demands directly adjacent to these cities) and because of the effective recreation season (due to work constraints and other commitments), the peak use phenomenon may be a inescapable aspect of providing parks and areas that are highly accessible. Just as in highway and other transportation planning, recreation development efforts cannot be geared entirely to peak use. Development needs to be tied to something less than peak use for public and private investment to be economically feasible and socially responsible. Alternately, efforts need to be made to mitigate the human and resource impacts of these peak use periods. Strategies and methods to accomplish this end are discussed in Section 5.

### 3.5 Resource Degradation Caused by Excessive or Inappropriate Use

Recreational use is rarely considered a problem. Yet the impact of providing for people's recreation activities has left and continues to leave its mark on natural resources. First, many recreation areas have been acquired by public agencies with little forethought given to how they will be managed to sustain the massive human impacts to which many will be subjected. Similarly, we find that many areas are planned and managed with economic impact concerns having distinct priority over environmental impacts. Federal grant programs for recreation, as for many other areas, emphasize initial capital costs for acquisition and development. Little assistance is provided for continuing maintenance and operation expenses.

It's difficult to consider recreation as a cause of pollution because recreation is traditionally the first use to suffer from water pollution and other degradation. But the pollution potential is there! The increasing number of recreationists engaged in diversified recreation pursuits (many with potential for heavy environmental impact like camping, all-terrain vehicle use, power boating and trail bike use), together with many of the developments specifically planned for their use, are further impacting on coastal resources. Examples of impact include extensive use of concrete for parking areas and facilities, destruction of dunes and coastal vegetation, interruption of ecological succession, noise impacts, increased forest fire hazard, oil in water, soil impact on tree cutting, disturbance of wildlife, etc.



If we are to sustain our present public shorelands, efforts need to be made to insure they survive the onslaught of being too accessible for human use. . . this is where the peak use phenomenon interacts with resource protection strategy and methods. This interaction is one of the greatest management challenges facing shoreland managers today.

Some, like the American Waterworks Association, a group of water supply administrators, recognize the potential recreation impact on water quality and restrict the recreational use of their reservoirs because they do not have the means to mitigate the impacts<sup>7</sup>.

When coastal and shoreland resources are already in limited supply, such solutions are unacceptable. The essential task, however, is one of resource management where the human carrying capacity of each area is identified and maintained.

### 3.6 Difficulties in Assessing of Outdoor Recreation Values

As recreation demand increases there is a further need for recreation resource allocations. Other resource uses are in competition with recreation in allocation decision-making. Choices have to be made between alternative resource uses, though each alternative may provide desirable results.

The critical task facing planners is how to justify more resources for recreation. (In the past, resource managers have often had to justify the prevailing recreation use of an area in the face of a new, more valuable use such as timbering, mining or petroleum development.) Such evaluation decisions need to be made on the basis of values associated with alternate uses.

Since recreation is usually provided as a public service and good, it is often regarded as a non-market good. This is where the problems begin. If we were talking about private recreation lands and their value, one could assume that increasing recreation demands would lead to higher land values and prices bid. This visible increase in value doesn't really occur in the public sector because public recreation has been traditionally maintained as a nearly-free good.

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7 American Water Works Association. "Recreational Uses of Domestic Water Supply Reservoirs." American Water Works Association Statements of Policy. American Water Works Association, New York, 1967, pp. 15-16.

An added problem for recreation valuation is that many component values remain as yet unquantified. These values are not unquantifiable; more research is needed, though, to be able to consider them fully in decision-making. Examples of as yet unquantified values include the value of wilderness solitude, the values of aesthetic amenities, and the values of resource quality.

The critical task, therefore, is one of evaluating the economic costs and benefits associated with recreational use, so coastal recreation can better compete with alternative resource uses. Many have tried to avoid traditional natural resource decision-making by saying that coastal resources (and the experiences they provide) are priceless . . . saying they are priceless, though, may be like saying they are without value. If they are priceless, why shouldn't the resource be put to alternative use where the benefits can at least be evaluated?

Since no formal market exists insofar as provision of public opportunity is concerned, there have been numerous studies of what people are willing to pay (or have actually given up) for their recreation experiences. To utilize people's willingness to pay in calculating recreation benefits, the U.S. Water Resources Council has established a series of rule-of-thumb guides indicating a general range of values associated with recreational use of resources (direct benefits).<sup>8</sup> Serving in the interim while recreation evaluation methodology is being developed, these rules-of-thumb are used extensively to produce estimates of benefits generated, and will be discussed in more specific terms in section 4.4D. They may not produce the most accurate estimates, but they are the best we have (and they are certainly an improvement over the priceless argument relied upon for many years).

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<sup>8</sup> U.S. Congress, Committee on Public Works. "Procedures for Evaluation of Water and Related Land Resource Projects - Findings and Recommendations of the Special Task Force of the U.S. Water Resources Council." Washington, D. C.: U.S. Government Printing Office, 1971, III-B-2-13-III-B-2-18.

### 3.7 Difficulties in Assessing Outdoor Recreation Needs and Requirements

NOT only is outdoor recreation resource planning a relatively new area, but it is a complex area involving peoples' recreation behavior and preferences . . . both of which are easily shifted by a variety of known and unknown factors. Because of the complexities involved, data is not always readily available. Data often exists, but may need to be conceptually organized to establish outdoor recreation needs. Further, there is no universally acceptable recreation resource planning method in use . . . the field is simply too new.

The critical components of outdoor recreation resource needs determination are SUPPLY and DEMAND. Identification of the existing recreation resource supply is relatively straightforward. Problems arise in simply conceptualizing demand. Do we use present outdoor recreation participation as an indicator of demand, recognizing that present participation is a reflection of existing opportunity, or do we need to consider preferences as well? The answer is an emphatic yes. The point to be made here is that there is still little agreement on a practical definition of demand . . . demand being a key element in needs determination.

We have more questions here than we have answers. How much recreation is enough? Outdoor recreation needs for what and for whom? Once needs are established, must planners and managers blindly choose to meet them? (Once needs are identified, someone usually tries to meet them!) Which have priority. . . resident or tourist needs? How are these needs similar or in conflict? Are outdoor recreation resource allocations technical or political matters? Political, of course. If they are political matters, how real are the needs? If political, and if allocations must be balanced statewide, how can we deal effectively with the coastal zone? There are many more such questions . . . all of which reflect on the difficulties involved in assessing outdoor recreation needs and allocating resources. These are questions to which there are no absolute answers. Many of the answers are revealed through public participation in the planning process. Public participation is discussed further in Section 5.10.

### 3.8 Recreation Resource and Facility Deficiencies

Table 5 provides a public/private breakdown of shoreland ownership by state. If this data were plotted on a map, we might expect those states that have the least amount of shoreland in public ownership to have urban centers in or directly adjacent to their coastal zones. Deficiencies in resources and facilities

Table 5. Estimated Mileage, by State, of the U.S. recreation shoreline by type, ownership, and development status

| State             | Total<br>(miles) | Type             |                  |                  | Ownership                      |                                |                               | Development status |
|-------------------|------------------|------------------|------------------|------------------|--------------------------------|--------------------------------|-------------------------------|--------------------|
|                   |                  | Beach<br>(miles) | Bluff<br>(miles) | Marsh<br>(miles) | Public                         |                                | Privately<br>owned<br>(miles) |                    |
|                   |                  |                  |                  |                  | Recreation<br>areas<br>(miles) | Restricted<br>areas<br>(miles) |                               |                    |
| Alabama.....      | 204              | 115              | ....             | 89               | 3                              | 1                              | 200                           | Low                |
| California.....   | 1,272            | 283              | 888              | 106              | 149                            | 100                            | 1,023                         | Moderate           |
| Connecticut.....  | 162              | 72               | 61               | 29               | 9                              | ....                           | 153                           | High               |
| Delaware.....     | 97               | 41               | ....             | 56               | 9                              | 9                              | 79                            | Moderate           |
| Florida.....      | 2,655            | 1,078            | 406              | 1,171            | 161                            | 122                            | 2,372                         | Low - Moderate     |
| Georgia.....      | 385              | 92               | ....             | 293              | 5                              | ....                           | 380                           | Moderate           |
| Illinois.....     | 45               | 13               | 32               | ...              | 24                             | 4                              | 17                            | High               |
| Indiana.....      | 33               | 33               | ....             | ...              | 3                              | ....                           | 30                            | Do                 |
| Louisiana.....    | 1,076            | 257              | ....             | 819              | 2                              | ....                           | 1,074                         | Do                 |
| Maine.....        | 2,612            | 23               | 2,520            | 69               | 34                             | ....                           | 2,578                         | Do                 |
| Maryland.....     | 1,368            | 40               | 912              | 416              | 3                              | 113                            | 1,252                         | Do                 |
| Massachusetts...  | 649              | 240              | 288              | 121              | 12                             | 6                              | 631                           | High               |
| Michigan.....     | 2,469            | 292              | 1,959            | 218              | 357                            | ....                           | 2,112                         | Low                |
| Minnesota.....    | 264              | 22               | 175              | 67               | 19                             | ....                           | 245                           | Do                 |
| Mississippi.....  | 203              | 134              | ....             | 69               | ...                            | 25                             | 178                           | High               |
| New Hampshire...  | 25               | 7                | 9                | 9                | 3                              | ....                           | 22                            | Very high          |
| New Jersey.....   | 366              | 101              | 33               | 232              | 18                             | 15                             | 333                           | Do                 |
| New York.....     | 1,071            | 231              | 590              | 250              | 47                             | ....                           | 1,024                         | Moderate           |
| North Carolina... | 1,326            | 285              | 260              | 781              | 139                            | 42                             | 1,145                         | Low                |
| Ohio.....         | 275              | 20               | 195              | 60               | 9                              | 5                              | 261                           | High               |
| Oregon.....       | 332              | 133              | 181              | 18               | 101                            | ....                           | 231                           | Moderate           |
| Pennsylvania....  | 57               | 9                | 44               | 4                | 19                             | ....                           | 38                            | Do                 |
| Rhode Island....  | 183              | 39               | 145              | 4                | 8                              | 10                             | 170                           | High               |
| South Carolina... | 522              | 162              | ....             | 360              | 9                              | 10                             | 503                           | Moderate           |
| Texas.....        | 1,081            | 301              | 421              | 359              | 5                              | 18                             | 1,058                         | Very Low           |
| Virginia.....     | 692              | 160              | 118              | 414              | 2                              | 26                             | 664                           | Low                |
| Washington.....   | 1,571            | 121              | 1,294            | 156              | 46                             | 27                             | 1,498                         | Moderate           |
| Wisconsin.....    | 724              | 46               | 634              | 44               | 13                             | 48                             | 663                           | Do                 |
| Total.....        | 21,724           | 4,350            | 11,160           | 6,214            | 1,209                          | 581                            | 19,934                        | .....              |

Source: U.S. Outdoor Recreation Resources Review Commission. Shoreline Recreation Resources of the United States.  
Report No. 4. Washington, D.C. 1962



are difficult to project nationally due to considerable variation among states. Each state needs to analyze its supply of coastal resources and facilities, and understand the extent of demand on these facilities, and identify the extent of facility or resource need.

It's difficult to deal with deficiencies in the area of recreation for several reasons. Many speak of deficiencies in public facilities and development needs when they haven't fully considered commercial facilities during the planning process, even though the latter satisfy the public's recreation demands. Such a posture is surely self-serving to the agency. On the other hand, the public sector may choose not to meet facility deficiencies because it sees a genuine role for commercial enterprise to play, in which case the market will determine and when needs are met.

Deficiencies or lack of supply are very difficult to identify, as the public usually compensates by going elsewhere and engages perhaps in different activities than originally planned.

This notion of substitutability is receiving increased research attention because of the extensive implications for planning and management. On the other hand, newly developed facilities may induce a demand of their own, quickly filling them to capacity.

Deficiency is an elusive concept unless arbitrary population or design standards are applied. Such standards have been traditionally used in the area of recreation and parks because they "tidy up a very sloppy area." Recreation and park standards are, however, very arbitrary and may not correlate well to actual need.

### 3.9 Recommended Selected Readings

- Clawson, M. and J. L. Knetsch. Economics of Outdoor Recreation. Baltimore: The Johns Hopkins Press, 1966, pp. 93-111, 145-162, 164-179, 211-228.

(The authors discuss some of the basic causal factors affecting outdoor recreation demand, use of natural resources for recreation, preservation of recreational qualities, and the value of land and water resources when used for recreation.)



- Ditton, R. B. The Social and Economic Significance of Recreation Activities in the Marine Environment. Madison: University of Wisconsin Sea Grant Program, 1972.

(A short paper discussing some of the socio-economic aspects of coastal recreation. Emphasizes the importance of evaluating the total value of recreational use in each coastal zone.)

- Ducsik, D. W. (ed.) "The Crisis in Shoreline Recreation," in Power, Pollution and Public Policy. Cambridge, Massachusetts: The MIT Press, 1971, pp. 91-186.

(Focuses on the heavy demands for shoreline recreational opportunities in the Northeastern United States and the lack of public access to shorelands. Provides useful cases of the Cape Cod area and the Boston Metropolitan region.)

- Ketchum, B. H. (ed.) The Water's Edge: Critical Problems of the Coastal Zone. Cambridge; The MIT Press, 1972, pp. 84-92.

(Provides a good overview of coastal recreation problems and opportunities. Draws upon research findings and makes recommendations for considering recreation in coastal decision-making.)

- New England Marine Resources Information Program. Outdoor Recreation Uses of Coastal Areas. Publication No. 1. 1969.

(A reprint of a section of the panel reports of the Commission on Marine Science, Engineering and Resources which discusses issues related to existing and future recreational uses of our coastal areas.)

- U.S. Outdoor Recreation Resources Review Commission. Shoreline Recreation Resources of the United States Study Report No. 4. Washington, D.C., U.S. Government Printing Office, 1962.

(Contains an analysis of Great Lakes and ocean shoreline of the contiguous states, presents a detailed state-by-state summary of quantitative and qualitative factors affecting their recreational use and includes a classification of national shoreline resources.)

- Winslow, Edwin, and Alexander B. Bigler. "A New Perspective on Recreational Use of the Ocean." Undersea Technology. July, 1969. pp. 51-53.

(An attempt to make area of magnitude forecasts for ocean recreation to 1980 using secondary data sources.)



SECTION 4

COASTAL RECREATIONAL PLANNING AND ANALYSIS



## 4. COASTAL RECREATION PLANNING AND ANALYSIS

### 4.1 Planning Objectives and Policy

Once a decision has been made that outdoor recreation is a permissible coastal zone use with a high level of priority, the task of outlining and designing the coastal recreation element of the coastal zone management plan must be thoughtfully undertaken. The primary objective of such an element should be to create a framework to guide creative public and private action relative to recreation. The scope and content of this element will depend on the recreation resources and opportunities available in the states. Since states are encouraged to seek solutions to coastal problems which best fit their individual needs, guidelines and standards have not been established for coastal recreation elements. Some basic aspects, however, cut across most resource planning efforts. The plan element should be:

- A. Comprehensive - encompassing 1) all significant outdoor recreation activities in the coastal zone, 2) opportunities for all age groups and population segments, 3) resident recreation as well as tourism use, and 4) interstate and interregional relationships.
- B. General - dealing with significant trends, problems policies, needs, and allocations. The coastal recreation element need not deal with detailed specifics such as site planning, layout and design. While state comprehensive outdoor recreation plans (SCORP's) are very general by design, coastal elements may be more specific by virtue of the fact that a smaller geographical area is being focused upon.
- C. Long Range - looking ahead 15 to 30 years into the future. While looking ahead, the element should be immediately applicable and capable of dealing with existing problems.
- D. Action-Oriented - geared to the land and water allocations being proposed by public agencies and private interests.



Because state goals, interests, and resources vary there is no universally accepted method for assessing recreation needs. There is no "cook book" or formula that can be easily used. Due to the general planning guidelines issued by the U.S. Bureau of Outdoor Recreation, there is agreement on some of the basic elements involved in recreation resource planning. Beyond the basic planning elements to be considered and evaluated, state agencies and consulting groups have had the freedom to develop their own tools, methods and techniques to identify outdoor recreation needs. This is as might be expected due to the diversity between states and the newness of the area being analyzed.

Based on plan requirements specified by the U.S. Bureau of Outdoor Recreation for statewide comprehensive outdoor recreation planning, coastal recreation plans should detail the following prior to any planning analysis<sup>1</sup>:

- A. Statement of planning objectives
- B. Scope of plan
- C. Citation of legal authority for coastal recreation planning and management
- D. Statement of how plan will be maintained and, as necessary amended

#### 4.2 The User-Resource Recreation Planning Method: An Overview

This method was developed in 1959, several years before the Land and Water Conservation Fund Act, before the U.S. Bureau of Outdoor Recreation and before much of the nationwide interest in meeting outdoor recreation needs. The method was developed by the National Advisory Council on Regional Recreation Planning, with financial support from Resources for the Future, Inc. (RFF). Basically, the user-resource method identifies recreation user requirements, and relates these requirements to the available and potential outdoor recreation supply base to identify recreation resource needs (or a surplus, perhaps). Planning guides are used to relate user needs to resource supply. The basic

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<sup>1</sup> U.S. Department of the Interior. "Bureau of Outdoor Recreation Manual" Grants - in - Aid Series, Part 630, State Outdoor Recreation Plan. Washington, D. C., 1973, n.p.

elements of the User-Resource Planning Method are outlined in Figure 3 <sup>2</sup>.

The word "method" is a misnomer here. The report really doesn't present a method ("cook book," formula, etc.) but rather a planning framework for use by recreation planners. This framework can be followed to put together a coastal recreation element.

The planning framework as developed is based on ten basic planning assumptions. These assumptions are as follows:

1. "All recreation users may be consolidated into a limited number of 'user groups' according to the type and quality of the recreation experience that each user requires.
2. Each recreation 'user group' may be identified by certain social and economic characteristics that are determined from available census data. It should be possible to estimate the size and distribution of the present and future recreation requirements of each 'user group'.
3. Each recreation 'user group' requires certain types and amounts of resources in order to provide needed recreation opportunities.
4. The amount of space allocated for each type of recreation experience is determined from physical as well as psychological requirements.
5. The recreation planning region may be defined in terms of the existing landscape personalities (critical characteristics)
6. The interacting environmental characteristics (terrain, climate, flora, fauna, etc.) of each landscape personality have a measurable potential for recreation use.
7. Each recreation resource type within a region has a maximum user carrying capacity (number of users per acre, per day and per season). When used beyond this capacity, the characteristics and quality of the resources are altered or destroyed.

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2 National Advisory Council on Regional Recreation Planning. A User-Resource Recreation Planning Method. Hidden Valley, Loomis, California: National Advisory Council on Regional Recreation Planning, 1959, 79 pp.

Figure 3.

# A DIAGRAM OF USER-RESOURCE RELATIONSHIPS

## IDENTIFY RECREATION USERS AND RESOURCES

Analysis of Recreation  
Interests and Activities

results in

Formation of User Groups  
(based upon similar  
recreation experiences and  
resource requirements)

which have

Certain Social and  
Economic Characteristics

Analysis of All Land  
and water Resources

to determine the

Landscape Personality

which include several

Major Recreation  
Resource Types

which are used to

## ESTIMATE RECREATION DEMAND AND SUPPLY

of

Requirements of User Groups

of

Potential Resource Types

are related through the use of  
Recreation Planning Guides

Landscape Interpretation and Design

Recreation Costs and Benefits

to

## PROPOSE A RECREATION PLAN

For The Region  
or Planning Area

8. The accessibility and distribution of recreation areas have an influence on their potential use.
9. Landscape interpretation and design studies determine the most suitable kind, amount and arrangement of recreation development at each recreation area.
10. Recreation experiences have both tangible and intangible values. These values may include direct dollar expenditures, the personal satisfactions that users receive and certain social and cultural benefits."

#### 4.3 Baseline Data Collection

Data on activity demand/activity (within the coastal zone) and on available and potential coastal recreation resources need to be acquired and analyzed to determine needs.

##### 4.3A Inventory of Coastal Recreation Resources and Facilities

A recreation resource inventory should be preceded by a substantive discussion of pertinent coastal zone characteristics such as regional setting, geography, geology, topography, climate, existing land use, regional economy, existing transportation patterns and volumes, etc. Much of this information would normally be available in the overall CZM planning process. This list is not intended to be exhaustive but rather to indicate the type of preliminary analysis needed.

An inventory should document facilities and resources provided by the state, county, city, towns, villages and other governmental entities. Commercial outdoor recreation enterprises that charge fees for entrance or for use, and provide more than food and lodging, should be included in the inventory. Most facility and resource data can be collected through "desk study" utilizing existing state and regional reports and documents. The key to being able to use existing data sources is whether or not data can be "broken out" for coastal locations.



Inventorying the commercial sector more often than not is a tedious task that will require field work. Chambers of Commerce and other promotional groups should not be relied upon solely for commercial recreation inventory information, as they may only provide data on member enterprises. This source of information can be a beginning point, and should be followed up with other information sources.

It is suggested that data be collected under the following illustrative inventory headings:

1. Streams
  - a. location
  - b. watershed (square miles)
  - c. miles of public shoreline
  - d. gradient (feet/mile)
  - e. drought classification
  - f. significance to spawning
  - g. geographic distribution in coastal zone
  - h. potential for fishing, canoeing, and other activities
2. Wetlands
  - a. location
  - b. acreage
  - c. analysis of productivity mapping
  - d. geographic distribution in coastal zone
  - e. recreation potential
3. Coastal Shoreline
  - a. miles of shoreline
  - b. effective support acreage
  - c. miles in public ownership or available for public use
  - d. extent and description of access points
  - e. recreation potential
4. Description of Coastal Waters
  - a. depths
  - b. water quality
  - c. tidal influence
  - d. bottom quality variations



5. Existing Park and Recreation Areas (i.e., national state, local and commercial areas)
  - a. location
  - b. acreage
  - c. acreage by facility class
  - d. acreage provided by governmental level and commercial sector
  - e. geographic distribution in coastal zone
  - f. number of facilities/activity at each area, i.e. marinas, boat ramps, fishing piers, size of charter and party boat fleet, etc.
  - g. in addition to park and recreation areas, fish and game lands, roadside areas, and historic sites should be documented
6. Establish extent of facilities within each coastal planning area for various coastal recreation activities.

In addition to traditional inventory data, plans, programs, proposals, and policy problems relevant to recreation should be presented and discussed. An understanding of how policy relates to the present inability to provide certain resources, or how changes in existing policy may increase opportunity, is a critical aspect of any analysis of supply.

#### 4.3B Determination of Activity Demand

As defined earlier, activity demand refers to recreation activity consumed within a particular geographical region. There are two kinds of demand: expressed demand and latent demand. Expressed demand refers to actual recreation participation while latent demand refers to an unfulfilled desire to participate in recreation activity. Lack of money, time, facilities, and crowding may prevent latent demand from being expressed. Because of the problems involved in operationalizing latent demand, the methods section will deal exclusively with calculating and projecting expressed demand. Latent demand should be kept in mind, however, because of the potential for change in participation patterns.

Development of a coastal recreation plan requires information about the coastal recreation activity of coastal zone residents, other state residents residing outside the coastal zone, and out-of-state tourists. We are interested in their coastal recreation activity within a specific area of the total U.S. coastal zone — namely, that area within the respective states.

Most states have already developed data on recreation activity demand in earlier statewide comprehensive outdoor recreation planning efforts. Sometimes this data can be recast and resummarized to determine coastal zone recreation demand. More often than not though, statewide demand data may present too many problems to be useful in coastal zone planning. Some common problems include:

1. Estimates and projections may use ORRRC (1962) regional participation rates, and resultant data may be unreliable. This unreliability may be compounded by linear projection.
2. A full complement of coastal recreation activities is usually not included in SCORP planning. Further, for those activities like fishing, boating and swimming that are included, we are often unable to separate fresh water activity from salt water activity.
3. Data developed through resident household survey may not describe total recreational use since tourists are not included. For coastal areas where tourism is an important factor to be considered, a survey of coastal zone residents would yield insufficient data for planning purposes.
4. Data collected on a county basis is often grouped on a regional basis, making it impossible to identify and use coastal county data.

These are four of the most common problems encountered when using SCORP demand data. There are other problems!

Alternately, useful SCORP's will provide data that are based on household survey as well as tourist checkpoint studies in which extent of participation/activity and

location of participation/activity are determined. SCORP's should be able to provide data on present and projected recreation occasions/county. Demand estimates should be annual (if participation is evenly distributed, or seasonal with some prediction of peak period - Saturday, Sunday, weekend) occasion levels.

If coastal recreation planning is to be undertaken, and the preceding necessary data is not available from the state agency charged with state comprehensive outdoor recreation planning, several alternative efforts need to be considered:

1. A household survey of state resident households could be made to determine the type, extent, location and related spending of coastal recreation activity. In addition, a survey of non-resident tourists would need to be coordinated with the State Highway or Tourism Agency to represent tourist demand for coastal recreation. In addition to current coastal recreation participation, preferences for activities not previously engaged in should be solicited. From survey data collected it should be possible to determine the effective in-state and out-of-state market area for the state's coastal zone. This would be useful for further prediction purposes, i.e., trying to understand the impact of increased gasoline and travel costs on coastal zone use. Recreational use data should be broken down by coastal county, and further, by activity category, to establish total annual (or seasonal) number of recreation occasions by activity, by coastal zone county. Field study can be used to estimate peak period figures.
2. Perhaps previous data collected by a SCORP agency can be used if certain assumptions and delimitations are made early in the planning. A prime example would be when survey data from coastal county households are used to represent and/or approximate coastal recreation demand. While such an approach ignores the fact that inland residents and tourists both use the coast for recreation, it is nevertheless better than no estimation of demand at all. At least it represents the interests of those who by virtue of their residential location have a considerable stake in allocation decisions.

3. Another approach is to gather data on the use of existing coastal facilities and resources. While attendance data from campgrounds and parks can be easily assembled, other activities present problems either because use is dispersed or attendance data aren't kept. For these latter activities, estimates based on field study and observation can be made. An analysis of license plates (out-of-state and within state locations) can be made to determine the origin of coastal users, and to establish effective market areas for predictive purposes. Informal interviews at random coastal locations can be conducted to gather additional planning data and information.

Regardless of the approach used, the goal of coastal demand analysis is to determine by coastal zone county the total number of recreation activity occasions being consumed by activity in the county. Peak use data will place total occasions/activity in better perspective for planning. Projections of activity occasions can be made using annual increase rates as promulgated by the Bureau of Outdoor Recreation or private industry. As projection dates arrive, prediction can be corrected and future projections adjusted accordingly

#### 4.4 Analytical Tools for Coastal Recreation Planning

##### 4.4A Assessing Recreation Requirements

Activity demand in each coastal county needs to be related to recreation resource supply to establish resource development needs. To compare activity participation with resource supply requires a common denominator without which one is comparing "apples and oranges." This common denominator is provided through planning guidelines and standards.

Spatial standards provide optimum use levels per unit of area. By using spatial standards, supply can be viewed in terms of the number of recreation occasions that supply can support. When supply is expressed in terms of recreation occasions, it can then be related to demand data expressed in recreation occasions to reach some conclusions as to adequacy.



Most spatial standards have not resulted from research but rather have emerged as rules-of-thumb based on current practice. Usually there are variations within the standards for an activity to achieve different goals, i.e., density level, location relative to urban centers and environmental/economic trade-offs. Spatial standards as presently implemented are not intended to be precise but rather to guide the level and density of development desired.

Spatial standards present several problems:

1. Most standards have not been validated.
2. They may or may not reflect environmental carrying capacity concerns; (undoubtedly, lower density standards are a move in this direction, but most have not been established through environmental study).
3. There are numerous activities for which no spatial standards exist.
4. Spatial standards are flexible enough so as to be easily misused to manipulate supply-demand relationships. Most spatial standards recognize that users are unlikely to use a particular area or facility for the entire day, and consequently a turnover factor is usually included.

The following are included as examples of space standards relevant in coastal planning:<sup>3</sup>

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<sup>3</sup> Wisconsin Department of Natural Resources, Wisconsin Outdoor Recreation Plan, Madison: Wisconsin Department of Natural Resources, 1968.



## ACTIVITY

### Facility

### Standard

#### PLEASURE DRIVING AND SIGHT-SEEING

None available

#### PICNICKING

Rural picnic area.

One developed acre for each 40 picnickers at 8 tables per acre with 19 undeveloped acres (allowing less than 1/2 acre parking for 10 cars). A turnover rate of 1.6 persons per table and, with over 3 people per table, 40 persons per acre each day is expected.

#### CAMPING

Camp area.

One acre of developed land accommodates 5 camp units. 19 acres of undeveloped land supports this one acre. At 3 campers per unit, 20 acres accommodates 15 campers per day.

#### HIKING AND NATURE WALKING

Nature trail.

50 people per mile of trail. Trails are 1-2 miles long. With a turnover rate of 8, there are 400 people per mile of trail per day.

Rural hiking trail.

40 hikers per mile of hiking per day.

Urban hiking trail.

90 hikers per mile of hiking trail per day.

#### SWIMMING

Beach, rural area.

3 supporting acres for each acre of beach. The acre of beach accommodates 185 swimmers, over 12 years old, at any given time. This provides 200 square feet of beach per swimmer. With an

average daily turnover of 3, the acre beach and its 3 supporting acres accommodates 555 swimmers per day.

#### FISHING

Fishing area.

One person per 3.6 acres of surface water. Estimating 2.2 persons per boat and 8 acres per boat.

#### WATER SKIING AND BOATING

Water skiing.

One person per 13.3 acres of water. Estimate 3 persons per boat, 20 acres per boat may be adequate, but 40 acres per boat is more desirable. Turnover rate of 1.3.

Boating.

One person per 8 acres of water surface. Estimating 2.5 persons per boat, or 20 acres per boat. Small lakes with restricted motor sizes could support more than one boat per 20 acres.

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Standards which establish needs on the basis of population levels (population standards) are not applicable to most coastal planning efforts since both residents and tourists need to be considered.

It should be emphasized that it is not possible (or desirable) to develop absolute standards that would apply to all coastal areas. Standards are to be applied carefully with full recognition of existing availabilities of supply, land use patterns and environmental constraints.

Total coastal county recreation facility and resource needs by activity are determined by dividing activity demand figures by unit capacity figures. The final planning step is to subtract existing facilities from total facility and resource needs to establish net facility and resource needs.

#### 4.4B Use Capability Analysis: Matching Activities and Resources

Once area-wide facility and resource needs have been established, there is a need to insure appropriate areas are used to support the projected increase in activity levels. In addition to travel distance, market area constraints and traditional development location concerns, areas proposed for acquisition or use need to be evaluated as to their capability to support alternative recreational uses. This can be accomplished through an environmental impact analysis where potential impacts are documented and analyzed.

When Federal permits or funding support are involved state agencies are required to complete an environmental impact assessment dealing with the following aspects:

1. The environmental impact of the proposed action.
2. Any adverse environmental effects which cannot be avoided should the proposal be implemented.
3. Alternatives to the proposed action:
  - a. alternative recreation uses
  - b. alternative areas
  - c. alternative levels of development
  - d. do-nothing alternative

4. The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity.
5. Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented<sup>4</sup>.

The completed impact assessment is to be provided to the Federal agency providing the necessary permits and/or funds so they may satisfy statutory requirements under the National Environmental Policy Act (NEPA). Many states have similar statutory requirements for state agency actions.

Regardless of method or approach used, the analytical framework should be comprehensive, systematic and interdisciplinary. In the absence of complete understanding of when an environmental impact is serious enough to prevent a given activity or development proposal, most impact assessment procedures only serve to identify and rate impacts as to magnitude and importance.

Beyond the straight-forward documentation of impacts contained in most environmental impact statements, the environmental impact procedure developed by the U.S. Geological Survey has received the most attention. Using this procedure, environmental impact can be systematically determined by using a matrix to show the relation of project components to a comprehensive list of environmental consequences:

"The heart of the system is a matrix which is general enough to be used as a reference checklist or a reminder of the full range of actions and impacts on the environments that may relate to proposed actions. The marked matrix also serves as an abstract of the text of the environmental assessment to enable the many reviewers of impact reports to determine quickly what are considered to be the significant impacts and their relative importance as evaluated by the originators of the impact report<sup>5</sup>."

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4 National Environmental Policy Act, P.L. 91-190, Title 1, Sec. 102 (42 U.S.C. 4331).

5 U.S. Geological Survey. A Procedure for Evaluating Environmental Impact. Circular 645. Washington, D.C.: U.S. Government Printing Office, 1971, p. 1.



Another environmental impact analysis procedure has been developed by Sorensen. This procedure views impacts in terms of cause, condition, and effect rather than the usually assumed cause-effect linearity. Sorensen's procedure is particularly useful for understanding some of the causes and effects associated with coastal recreation development<sup>6</sup>.

Once impact analyses are completed for different development alternatives, and impacts are fully understood, there needs to be some determination of permissible recreation uses and priorities within this group for meeting demand, given existing resource capabilities. It is quite possible that a certain activity, class of activities, or pre-requisite development are unsuitable for the coastal zone. In lieu of such categorical determinations, decisions on permissible uses can be made on a case by case basis. These latter decisions need to be based on both what is needed (in the way of recreation facilities and resources) and what is possible given resource capability. Any idea that differences between recreation demand and supply (NEEDS) should be automatically met is erroneous. Such an approach would ignore concepts of environmental impact and resource capability.

#### 4.4C Determination of Recreational Carrying Capacity

While the concept of carrying capacity has its origins in the area of range management, it has been more widely applied lately in natural resources management. There is general agreement that recreational carrying capacity involves natural as well as social science considerations that need to be considered in establishing optimum use limits. Outdoor recreation carrying capacity has been defined as "the number of user-unit use-periods that a recreation site can provide in an average year without permanent biological or physical deterioration of the site's ability to support recreation or appreciable impairment of the recreational experience."<sup>7</sup>

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6 J.C. Sorensen, "A Framework for Identification and Control of Resource Degradation and Conflict in the Multiple Use of the Coastal Zone." Department of Landscape Architecture, University of California, Berkeley, 1971.

7 M. Chubb and P. Ashton. Park and Recreation Research: The Creation of Environmental Quality Controls for Recreation. Technical Report. Dept. of Park and Recreation Resources, Michigan State University, East Lansing, 1970.



Since carrying capacity is primarily a management concept, the level of capacity can be manipulated to achieve a variety of management goals. Unfortunately, carrying capacity analysis and usage controls are often needed because original planning might not have been environmentally sensitive or because of an extensive unforeseen demand.

Because carrying capacities are based both on resource capability and human perceptions and levels of expectation (and satisfaction), this area of analysis is a most difficult one. It is possible, if managerial concern places greater priorities on resource protection, to restrict a carrying capacity analysis to resource capability and establishment of compatible use levels based on preventing biological or physical deterioration. If managerial concern extends to a concern for the quality of recreation experiences as well, then users need to receive more attention in the analysis. This latter area would require information on the extent of present usage, perceptions of users regarding resource quality components and attitudes regarding other user groups, intensity of use and proposed management changes. There have been numerous studies in this area to guide study design and implementation.

The goal of carrying capacity studies is to determine the optimum amount of use (in terms of varying use patterns and mixes) a given area can support. Establishment of optimum levels requires understanding of when resource or experience quality impairment occurs. Unfortunately, there are no standards that can be used to simplify these matters. Consequently, site specific studies need to be directed to establish critical levels of impairment.

Once optimum use levels are known, management policy and use regulations need to be promulgated if established use levels are to be maintained.

Unlike land-based activities that can be segregated through careful design, many often incompatible water-based activities can take place simultaneously in coastal waters. The critical task is not one of conducting an activity by activity analysis, but rather to predict the optimum mix of coastal recreation uses and levels of use.

#### 4.4D Economic Analyses

In addition to the traditional concern with project costs, proposals for public expenditures need to calculate monetary benefits to society. The ratio of benefits to costs is the common basis for evaluating resource allocations among various uses. Increasingly, more quantitative and objective analyses of alternative policies and projects are being made. Analysis of alternative benefits and costs may not be the best approach to resolving resource allocation problems but it does provide the best basis for comparing alternatives we have today. Since the benefit-cost approach is likely to remain at the heart of economic decision-making, there are obvious advantages in evaluating recreation in the same way as other competing uses. Efforts need to be made to estimate or approximate previously unquantified recreation values if the full impact of recreation value is to be considered.

Rule-of-thumb procedures for establishing proxy values for a recreation occasion have been developed by the U.S. Water Resources Council. For example, a single unit value can be assigned as a simulated price per recreation day. These proxy values range from \$.75 to \$2.25 for general days of recreation like swimming that require little equipment and expenditure, to from \$2.50 to \$7.00 for specialized recreation days of boating and fishing that require greater investment and expenditure<sup>8</sup>.

Applying these proxy values to the population of all coastal counties (excluding the Great Lakes), it has been estimated that the total recreational value of the U.S. coastal zone is about \$300 million if each person participates on five occasions annually<sup>9</sup>. This estimate also

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8 U.S. Congress, Committee on Public Works. op. cit.

9 U.S. Senate. The National Estuarine Study. Report of the Secretary of the Interior to the U.S. Congress. Senate Document No. 91-58. Washington, D.C.: U.S. Government Printing Office, 1970, pp. 152-155.

excludes tourists and state residents from other than coastal counties who use the coastal shoreline, and is therefore considerably underestimated. Since the same procedure of proxy values is used to value other resource uses, the procedure and relative magnitude of value is more important than any exact figure. Using the same procedure, the direct benefits associated with recreation within any specific coastal zone planning area can be similarly determined.

A second class of benefits (secondary or indirect benefits) include the gains in the area where expenditures are made. Major areas of secondary benefit impact related to outdoor recreation and tourism include gasoline, lodging and restaurant expenses. While decision-makers are concerned with the direct benefits to accrue from a proposed coastal recreation area (how many people will use the area, how far will they travel and how much will they spend, etc.), they are also likely to consider the impact the proposed area will have on the local and regional economy.

Economic impact on the local economy cannot be measured by total expenditure. Rather, income, the number of new jobs, sales and value added are all indicators of local and regional economic impact. Just as there are different indicators of economic impact, so too are there different methods for calculation. Beyond a concern for the number of visitors generated and the intensity of their expenditures, impact analysis must consider the extent to which visitor spending recirculates or "trickles down" within the local area. This aspect of economic impact analysis is referred to as a multiplier.

Work done by Rorholm, et al., in the New England region provides some data on variations among marine industry multipliers. When considering other coastal industry sectors, the coastal recreation industries do well in maintaining a flow of dollars through the local economy:<sup>10</sup>

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10 Rorholm, N., Lampe, H.C., Marshall, N., and Farrell, S.F. "Economic Impact of Marine-Oriented Activities - A Study of the Southern New England Marine Region." Bulletin 396. Department of Food and Resource Economics, University of Rhode Island, 1968.

| <u>Sector</u>          | <u>Multiplier</u> |
|------------------------|-------------------|
| Fish Catching          | 2.76              |
| Fresh Fish Processing  | 3.32              |
| Ship and Boat Building | 1.99              |
| Marinas and Yards      | 2.76              |
| Marine Manufacturing   | 2.37              |
| Charter Fishing        | 3.08              |

While regions will vary in the extent to which spending moves through the economy, the above multipliers indicate that coastal recreation monies go farther in the local economy than some other marine uses. Also, they indicate that some coastal recreation activities are better generators of local re-spending than others. These concerns should be at the heart of any discussion (along with environmental and cost concerns) of permissible coastal uses and establishment of priorities within permissible uses in the coastal zone.

#### 4.5 Recommended Selected Readings

-Avery, T.E. Natural Resources Measurements. New York: McGraw-Hill Book Company, 1975, 339 pp.

(See Chapter 14 for techniques relative to analysis of recreational resources supply.)

-Burchell, R.W. and D. Listokin. The Environmental Impact Handbook. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers-The State University, 1975, 234 pp.

(This "handbook" presents a standardized approach to EIS procedures and requirements. Deals with EIS formats, EIS responsibility, EIS procedures, and EIS review and guidelines. Contains an excellent EIS bibliography of current literature.)

-Driver, B. L. (ed.). Elements of Outdoor Recreation Planning. Proceedings of a National Short Course held in Ann Arbor, Michigan, May, 1968. Ann Arbor: University Microfilms, 1970, 316 pp.

(Presents conference papers relevant to a variety of topics involved with outdoor recreation planning.)

-Graduate School of Design, Harvard University. Three Approaches to Environmental Resource Analysis. Washington, D.C.: The Conservation Foundation, 1967, 102 pp.

(Compares and contrasts resource analysis approaches of I. McHarg, A. Hills and P. Lewis.)



-Leopold, L. B.. et al. "A Procedure for Evaluating Environmental Impact." U.S.G.S. Circular 645. Washington, D.C.: U.S. Government Printing Office, 1971, 13 pp.

(A basic matrix approach for rating importance and magnitude of environmental impacts on an ordinal scale. Check list of elements involved in proposed action is useful in development.)

-National Advisory Council on Regional Recreation Planning. A User-Resource Recreation Planning Method. Hidden Valley, Loomis, California: National Advisory Council on Regional Recreation Planning, 1959, 79 pp.

(An outline of basic elements involved in outdoor recreation resource planning. Provides insight into both estimation of recreation participation and resource capability for recreation. A user-resource planning method.)

-Sorensen, J.C. "A Framework for Identification and Control of Resource Degradation and Conflict in the Multiple Use of the Coastal Zone." Berkeley: Department of Landscape Architecture, University of California, 1971, 31 pp.

(An alternative method for relating project actions to environmental impact using a cause-condition-effect network. One of the networks included in this report deals with coastal recreation - recreation uses and developments are related to their known potential impacts on the coastal environmental system.)

-Texas A & M University, Department of Recreation and Parks and National Park Service. Recreation Management Institute Proceedings College Station: Department of Recreation and Parks, 1974.

(This conference proceeding is devoted entirely to the subject of carrying capacity.)

-U.S. Bureau of Outdoor Recreation. "Outdoor Recreation Space Standards." Washington, D.C.: U.S. Government Printing Office, 1967, 67 pp.

(Provides spatial and design standards for outdoor recreation activities as utilized by Federal, state and local agencies.)

-U.S. Congress, Committee on Public Works. "Procedures for Evaluation of Water and Related Land Resource Projects - Findings and Recommendations of the Special Task Force of the United States Water Resources Council." Washington, D.C.: U.S. Government Printing Office, 1971, n.p.

(This report provides proxy values for outdoor recreation activity days established by U.S. Water Resources Council. Using proxy monetary values, direct benefits associated with recreation development projects can be determined.)



-U.S. Department of the Interior. "Bureau of Outdoor Recreation Manual," Grants-In-Aid Series, Part 630, State Outdoor Recreation Plan, December 1973, n.p.

(Provides general guidelines for the states for their development of state comprehensive outdoor recreation plans

-Symonds, P. J. Equity and Efficiency in State Coastal Resource Management: An Application to Urban Recreational Policy. Los Angeles, California: Center for Public Affairs, University of Southern California, 1975. 209 pp.

## SECTION 5

### STRATEGIES FOR COASTAL RECREATION MANAGEMENT



## 5. STRATEGIES FOR COASTAL RECREATION MANAGEMENT

### 5.1 Methods of Securing Public Access

#### 5.1A Litigation

Condemnation has long been recognized as a legal procedure for acquiring land for public use and access. Condemnation must take place within the due process of law, and can take private property only for public use and with fair compensation. According to Kamp, "the public purpose served by park land acquisition is now so well established that there is no issue as to the legal power to condemn land for such programs."<sup>1</sup> Public parks and recreation facilities can be provided without constitutional barriers.

Advantage: A public entity can be assured of owning a specific parcel of land.

Disadvantage: This approach may create ill will with owners and adjacent residents and jeopardizes local relations.

Excess condemnation is a commonly used practice for securing parklands or access ways. This procedure would involve the taking of more land than is necessary for an actual right-of-way for a public facility such as a highway transportation corridor or pipeline. In some states, this may not be possible or may pose additional legal problems. The excess land could then either be used for park or access purposes or returned to private ownership with deed restrictions.

#### 5.1B Public Purchase - Fee Simple

Negotiated purchase of fee simple land is probably the most used means of land acquisition.

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<sup>1</sup> Kamp, B.D. Open Space Acquisition and Control - Selected Techniques for Political Subdivisions. College Station: Texas Agricultural Extension Service, n.d.

Advantages: Both negotiating parties must be satisfied before a transaction is consummated. There are no legal obstacles to the practice of negotiated purchase.

Disadvantages: During periods of tight budgets, fee simple purchase may be too costly when compared to other easement options, and land is taken off the local tax rolls.

Sometimes a purchase and leaseback agreement is used to respond to the two aforementioned disadvantages. This technique involves a fee simple transaction followed by the instituting of specific land use restrictions by the purchasing public agency. Then the land is leased back to the owner or a private developer to use within the limits of the established restrictions. In this way, public interest goals can be achieved with a return on public investment and without taking the land off the tax rolls.

Numerous federal grant-in-aid programs exist to assist state and local entities in their acquisition of recreation, access or open space. The most notable funding programs are the Land and Water Conservation Fund Program administered by the U.S. Bureau of Outdoor Recreation, Department of the Interior and the Open Space Program administered by the U.S. Department of Housing and Urban Development. This latter program, while not dealing exclusively with open space for park and recreation purposes, has been combined with the Urban Beautification and Historic Preservation Programs into the Community Development Block Grant in a single comprehensive grant process. Such community development "revenue sharing" and "block grants" are replacing categorical grants.

#### 5.1C Less Than Fee Simple Acquisition

Less than fee acquisition refers to the acquisition of certain rights (rather than ownership of title) on a given parcel of land. Rights are transferred by means of easements. An easement is an interest in land granting specific uses or restricting the manner in which it may be developed. Easements of major interest here are of two general varieties -- affirmative or negative. An affirmative easement provides that the easement holder



may make certain uses of the property while a negative easement, to the contrary, allows the holder to limit the use a landowner may make of his property. Generally, the longer (in time) the easement, the higher the cost. Likewise, the longer the easement sought by a political subdivision, the less willing the landowner may be to grant same.

Affirmative land interests which may be transferred to public ownership include hunting, fishing and beach access. Highway and public utility easements have particular promise for securing shoreland and beach access and for creating additional recreation resource supply.

Negative easements are secured to prohibit certain types of development and, particularly in the area of open space maintenance, accomplish much the same as affirmative easements. A negative easement is the same as purchase of development rights.

Conservation, scenic, and wetlands easements are all negative, and pertinent to coastal recreation and open space management. Conservation easements prohibit development in an effort to reserve natural resources for future use. Public access may or may not be included depending on the need and desirability. Similar to conservation easements, scenic easements are used to prevent dumping, control construction, prohibit billboards and the like. Wetland easements are secured to prevent drainage, fill and development.

Advantage: The easement approach is receiving wider acceptance because management goals can be achieved at a cost less than that of fee simple acquisition.

Disadvantage: Not all states have enacted enabling legislation permitting public acquisition of partial interests in land.

#### 5.1D Legislation, Public Rights and Open Beaches

In 1959, the Texas Legislature passed the first Open Beaches Act in the U.S. This act simply recognized

and reinforced the public's prescriptive rights to use the beach. Basically, there are two presumptions involved: (1) "the State (of Texas) never divested itself of its protection of the people's right to use the beach by the grant in the beginning, and (2) that even if it did, in certain instances, and it can be shown there is a presumption that the people have obtained a prescriptive right in the use of the beach by long usage."<sup>2</sup> The Open Beaches Act in Texas is important because it places the burden of proof on the littoral owner to show the two presumptions can be overcome, i.e., that under his land grant, the owner is entitled to exclusive use, or that it is clear to the public that they do not enjoy a prescriptive right to use the beach (and do not use same).

The Texas Open Beaches Act recognizes public rights in and to the area between mean low water and mean high water, and establishes an easement in the public area up to the vegetation line. However, if there is no clearly discernable vegetation line, or if it begins more than 200 feet from mean low water, the public thus maintains a prescriptive right to lateral ingress or egress. Nothing in the statute prevents a littoral owner from refusing perpendicular public ingress or egress over his land to reach the "public use zone" created by statute. This requirement can be satisfied by existing or future public access ways (perpendicular access) as provided by county or state government. The designation of a public zone and recognition of public rights have historically been the cornerstone of state funded access development programs. Without such funding programs, the public would be unable to fully exercise their public beach rights.

While prescriptive right provided the theoretical underpinnings for one of the presumptions in the Texas Act, three other theories support the public use of beaches elsewhere. The theory of implied dedication provides the basis for California cases -- the dedication doesn't have to have the real consent of the littoral owner; it may even take place with landowner opposition.

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<sup>2</sup> R. Eckhardt, "Open Beaches: A Public and Private Framework." In: Recreational Land Use and Coastal Zone Management: Issues and Perspective in Texas. Ditton and Seymour (eds.) Texas A & M University, 1974, p.85.

The theory of ancient right and custom was the basis of the Oregon case, Kay vs. Thornton. Lastly, in the City of Long Beach (New York) case, a theory of public trust (built upon the other theories) emerged. Here Long Beach sought to restrict a beach previously used free by the public at large to free use only by local residents. Those not living in Long Beach were to pay a use fee. The court rejected this practice because the City of Long Beach held the beach in trust for the public because of a previous public dedication.

The public rights to beach access are reflected in the National Open Beaches legislation now before Congress. This legislation is discussed in Section 7, Proposed Legislation

#### 5.1E Preferential Taxation

A political body's power to tax can be manipulated to aid in open space, parkland and access acquisition. Preferential tax assessment can be used to encourage a shoreland owner to retain his property in low density development. Assessment would be based on current use rather than its potential. There are several problems involved with preferential assessment and taxation. The preferential assessment may not be enough to counter a good offer to purchase made by a speculator. It is also difficult to determine if the landowner is genuinely committed to the rationale for his preferential assessment or is a speculator that is taking advantage. The Wisconsin Forest Crop Law provides some insight here. Here an individual can receive preferential assessment if he allows public access to his lands (for purpose of hunting, fishing, etc.) and is committed to sustained yield harvest of the timber on his property. If he continues to receive his preferential assessment, but decides not to harvest his timber, he is required to pay the owed equivalent of full taxes.

Postponement of taxes or tax deferral is also used to reward the landowner for preventing development or providing public access. To use the deferred tax technique requires a double tax assessment but this technique removes some of the problems associated with preferential assessment.

Tax breaks provide an important incentive for land donation. Lands may be bequeathed for public use as parks or recreation areas and result in a tax credit in the amount of fair market value for Federal estate tax purposes.

#### 5.1F Mandatory Park Dedication Ordinances

Mandatory dedication is a means of land acquisition whereby a political subdivision requires developers to deed a portion of each development to the public. The amount of development is usually determined by a percentage formula.

Advantage: Park land acquisition keeps pace with development and the cost is borne by development residents.

Disadvantage: Political subdivisions often discontinue other public land acquisition programs.

A cash payment in lieu of land is possible where land dedication is not desirable or where it is necessary to have public land acquired elsewhere.

Public access to the shoreline can be assured through subdivision and development control. Shoreline access for the public could be a condition in the approval of permits issued by a state or local regulatory agency.

#### 5.1G Other Methods

Zoning is not a method of acquiring land, but may be useful for creating recreational opportunities for the public at the discretion of the private landowner (a possible commercial enterprise). Zoning is also useful as a method to preserve open space by preventing, limiting or guiding future development of land.



Conservation or conservancy zoning is a useful tool to hold fragile and/or critical areas free from development. Conservation zoning may be used to protect wetlands, steep slope areas, areas of poor drainage or areas of particular recreational potential.

Flood plain zoning is used to protect life and property and to avoid the financial burden associated with flooding that usually must be borne by political subdivisions.

Shoreland zoning has been instituted at the state level in Michigan, Wisconsin and Vermont during the past five years. Basically, the programs require every county in the state to have regulations for the protection of shorelands. County regulations must meet state guidelines. Ordinances usually address 1) health and safety conditions for water recreation, 2) water surface demands, 3) requirements for waste disposal, 4) building setbacks, 5) preservation of shore growth and cover, and 6) conservancy uses for low lying lands.

Regulatory schemes for securing public access suggested here are discussed further in Section 5.5, Land Use Controls.

#### 5.1H Private Sector Considerations

All previous examples of methods and procedures have been options for governmental bodies and subdivisions. The private sector (particularly commercial enterprise) has an important role to play in securing public access. Looking broadly at access, it should be recognized that the commercial sector provides public access to many recreation resources. For example, the party and charter boat industries provide access to a fishery at a price well below that of a person securing his own boat and equipment. Without such commercial access, only the privileged would have access to many coastal recreation pursuits.



Much of the private resistance to increased public access, particularly perpendicular access across private land, could be eliminated through grants of immunity (to tort liability) for grantors of access easements to public entities. Likewise, public access needs to receive considerably more attention during facility (marinas, fishing centers, clubs, etc.) design so that public access can be included, but not to the detriment or loss of security of customers. Through careful design, security can still be maintained when boaters (and their boats) and vicarious participants are in close proximity.

## 5.2 Methods for Dealing with Transportation Problems

The critical relationship between recreation and transportation necessitates coordinated planning and management of these two functions. Public and private decision-makers have exhibited growing sensitivity to this need in response to a variety of factors, which include: broadened environmental impact review requirements for transportation, as well as park and recreation projects; increasing inconveniences and access restrictions imposed by congestion; more frequent and more sophisticated interdisciplinary planning efforts, as exemplified by studies carried out jointly between state transportation and park and recreation agencies; and expanding sentiment expressed for alternative transportation modes that are less demanding of natural resources, and have fewer adverse residual effects than the private automobile.

The National Park Service (NPS) in planning efforts for national seashores, lakeshores and coastal national recreation areas, has attempted to effectively integrate transportation, recreation and preservation considerations. The New York City Department of City Planning and NPS, with additional input from other groups, such as the Tri-State Regional Planning Commission, are developing a comprehensive transportation access plan for the Gateway National Recreation Area. This effort is distinctive by virtue of its treatment of transportation facilities that extend well beyond the recreation area's boundaries, and which are not used primarily for recreation. It also considers user needs within the New York Metropolitan Area, recognizing that the ability to serve a wide spectrum of the region's residents, and especially its estimated 2.5 million urban poor, is constrained by the transportation system. Criteria for the program include that it: have a short-term implementation potential; not be capital intensive; be cost effective; and be compatible with the plans of transportation and planning agencies.

In a more natural setting, NPS is formulating a transportation plan for Cumberland Island National Seashore in Georgia as part of overall master planning efforts. In attempting to minimize road building and environmental impacts, NPS is evaluating the feasibility of a ferry and bus system that would confine automobile use to inland locations, yet provide convenient recreational access to beach areas. NPS has formulated use projections based upon the season, day of the week, and time of day to facilitate analysis of capital and operating costs that would be associated with such a system.

In an effort indicative of increasing sensitivity by planners to recreation and transportation interrelationships, the Virginia Division of State Parks is sponsoring a transportation access study for False Creek State Park, a limited day-use natural area and beach recreation facility located along the southern coast of the state<sup>2</sup>. The study identifies and evaluates alternative routes, modes and internal park circulation systems. Of 30 modes in five categories initially considered, six - the private automobile, conventional bus, super tram, narrow gauge railroad, Rohr "N" series monorail, and excursion boat - were selected for the ongoing final evaluation phase of the project.

The California Preliminary Coastal Plan contains a number of innovative proposals for dealing with transportation, including: determination of a "capacity budget" for each through road segment along the coast, balancing, to the extent possible, remaining capacity with the traffic impacts of new development so that a portion of it can be used for recreational access; establishment of a Coastal Scenic Parkway Program, and special provisions for recreational amenities and public information services along the route; and creation of a Coastal Trails System that would link population centers with recreational facilities, and would incorporate selected waterways in the system, as well<sup>3</sup>. Hiking, bicycle and equestrian trails would be incorporated in the system.

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- 2 Howard, Needles, Tamman, and Bergendoff. False Cape State Park Transportation Access Study. Prepared for the Virginia Dept. of Conservation & Economic Development, Division of Parks, in Cooperation with the Virginia Dept. of Highways & Transportation. January, 1975.
  - 3 California Coastal Zone Conservation Commissions. Preliminary Coastal Plan. Hearing Draft. March, 1975.

The extreme peaking tendencies exhibited by seasonal and daily use patterns of most coastal recreation areas discourage capital intensive approaches to transportation problems; expensive facilities are difficult to justify when use capacities are approached or exceeded only a few times a year. The general coincidence of these peaks with lulls in work-based trips does present a potential for utilizing buses that might otherwise be idle for recreational transport.

Several obstacles must be overcome in devoting public transit system buses to the accommodation of recreational travel. Relatively high operating costs (particularly drivers' salaries) that characterize the operation of bus systems represent the most obvious constraint. Grants administered by the Urban Mass Transportation Administration (UMTA) have concentrated upon capital assistance, and Federal laws restrict aid to charter bus operations. Convenience factors, such as timing and frequency of service, proximity of stops to home and destination, and travel time, which are often most important in determining the amount of use bus systems receive, tend to limit the use of buses for recreational trips to densely populated routes or to charter operations. In addition, existing coastal recreation sites are often ill-equipped to handle buses once they arrive. Travelers may also be discouraged from using buses by the lack of storage space for equipment, such as umbrellas, fishing rods and reels, or surfboards. The AC Transit System in the San Francisco Bay Area, in an attempt to deal with one facet of this problem, initiated a special weekend bus service with storage space for bicycles.

A final problem that planners face in attempting to attract recreationists from their autos to buses is that driving may constitute a vital component of the recreation experience for many participants. Merely driving for pleasure is a highly popular activity along reaches of the nation's coastal highways, and the drive to and from the coast may include enjoyable components (e.g. stopping for meals at a favorite restaurant) of the overall trip for families and groups of friends. In order to prove successful, transit programs developed as alternatives to travel by automobile must integrate provisions for user characteristics, preferences and behavior. Such a program must take into account the entire recreation experience - from departure to the return home.



Coordination provisions in Section 306(c) (2) A of the Coastal Zone Management Act (16 USC 1455, 86 Stat. 1283) establish a framework for compatible planning efforts for transportation and recreation in coastal areas.

### 5.3 Methods of Reducing Socio-Economic Barriers

Much can be done by simply recognizing that there are barriers to coastal recreation participation. Too often in planning we are preoccupied with participation, and predicting how much and where it will occur. Planners need to give thorough consideration to why people don't participate in coastal recreation pursuits - for example, lack of a boat or equipment, lack of funds to bear costs of activity and related travel, inability to swim and age or infirmity. Taking this point further, the self-fulfilling nature of the recreation resource planning process should be further understood; namely, if participation in recreation activities is used solely as the basis for determining needs in an area, then "the rich get richer and the poor get poorer." If a community has no adjacent access to water or swimming facilities, a study of their swimming participation would probably reveal it to be quite low. In much past planning, these findings would be used to support facility location elsewhere where the demand was greater. Clearly, some planning and management decisions need to be made on the basis of latent demand and interest if participation deterrents are to be overcome.

The "parks are for people" concept as articulated by the National Park Service is an effort to overcome socio-economic barriers. A map of the United States will quickly reveal that most national parks are where people are not. As previously noted opportunities to visit national parklands have been greatly enhanced for the non-mobile urban dweller with the creation of the Gateway National Recreation Areas in New York and San Francisco. Parcels in close proximity to these major population centers were gathered together into management units. Most land secured was previously government owned as military installations or surplus property and little had to be secured through fee simple acquisition. Management of these areas will generally place high density recreation participation above traditional statutory concerns for resource preservation. Many states are accomplishing the same end as the National Recreation Areas by deploying state parks in, or in close proximity to, population centers.

Transportation planning and recreation resource planning have never been articulated well in the past. There are great opportunities for reducing socio-economic barriers by considering parkland and access development together with highway and mass transit planning. The increasing cost of gasoline is acting to push recreation resources farther away in distance, and thus out of reach for many. Efforts to locate park and recreation areas must consider the location and cost of transportation linkage systems.

To avoid sealing off parts of the coast for exclusive residential use (or any exclusive use for that matter), while still allowing for living near the sea, land use planning should give priority to hotel-motel lodgings, restaurants, and campgrounds over second home developments or, at least, those second home developments where rentals are not possible. Such a policy would favor a wider segment of the public and might minimize potential degradation as well.

Industry and commercial enterprises that block large areas of waterfront from public use need to be consulted and encouraged to open up selected areas to public use on weekend periods when demand is greatest. The questions of liability and security need to be fully addressed first within the context of recreational use.

Again, as previously mentioned, the commercial sector can play a significant role in reducing socio-economic barriers. One may have to be a millionaire to be a marlin fisherman, but with the advent of charter fishing fleets one doesn't have to "have a million" to go marlin fishing. Likewise, party boats and boat rentals can provide potential access for those without boats and equipment. This review of the access capability of commercial enterprise is by no means inclusive. While we usually look to the public sector for access development and provision of opportunity, we have only recently begun to recognize the public service aspects of commercial enterprise. We need to expect more from commercial enterprise and to provide means for encouraging the private sector.

#### 5.4 Restoration and Rehabilitation as Means of Improving Public Shoreline Access



A recent survey lists 119 towns and cities engaged in urban waterfront renewal<sup>4</sup>. Much of this renewal is being accomplished as a part of urban renewal efforts where large residential slum areas are removed. Sometimes removal goes too far in that local atmosphere and other aesthetic (and often intangible) values are sacrificed:

"When the project began, the waterfront, a 27-acre strip along the channel, resembled a small fishing village. It was a colorful mixture of marinas, seafood restaurants, fish stalls, raw oyster bars and piers for pleasure craft and excursion boats. Unfortunately, the same broad-scale approach taken toward the slum section was turned on the old waterfront as well -- the idea being to sweep away nearly all the old and replace it with modern design and architecture. However, unlike the slums, the waterfront, though shabby in spots, was playing a desirable and unique role in the city's commercial and aesthetic ecology<sup>5</sup>."

Restoration needs to proceed with caution.

Because of the potential for high property values adjacent to water, many successful shoreland restoration projects have mixed parklands and business. Working from their study of the San Antonio Riverwalk, Gunn, et al. developed criteria for evaluating shoreland potential for shoreland access restoration. Some of their basic criteria include:

- A. Areas within five minute's walking distance from the central business district have the greatest potential for park/business development.
- B. Water levels will need to be controlled to prevent damage from flooding.
- C. Some of the most important factors influencing renewal of waterfront include land price, development costs, land assemblage, owner policies, transportation and access, external influences and land use controls.

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4 S. J. Makler, "Washington's Waterfront Lesson." Water Spectrum. Vol. 6 (4), pp. 21-28.

5 Ibid., p. 21.

- D. Financing waterfront renewal remains a major obstacle for plan implementation. Since funding comes from a variety of Federal-state-local-private sources, project cooperation and collaboration can take place at the financing level.
- E. "While fee-simple ownership of the entire complex may expedite development, the Riverwalk (San Antonio) proves that a successful complex can result from the collaboration of many owners, agencies, and organizations."
- F. The main reason few cities have been successful is not lack of funding, lack of physical setting or lack of technical or professional input, but lack of commitment, leadership and public support.

## 5.5 Land and Water Use Controls

A variety of regulatory tools may be applied to secure and protect public access, and to enhance coastal recreation. Several of these tools were introduced in Section 5.1. While states have traditionally delegated their powers over land development activities to local government, the Coastal Zone Management Act (16 U.S.C. 1451, 86 Stat. 1280) encourages states to exercise their full authority over the lands and waters in their coastal zone. The Act further requires that state coastal zone management programs control land and water uses by any one or combination of three techniques: (1) state established criteria and standards for local implementation, subject to administrative review and enforcement of compliance; (2) direct state land and water use planning and regulation; or (3) state administrative review for the consistency of all development plans, projects or land and water use regulations. States, thus, must either broaden the scope of their regulatory responsibilities, or increase their review capabilities for local regulatory activities in coastal areas.

### 5.5A Zoning

Zoning represents the most widely applied regulatory mechanism to manage development activities. Exclusive use zoning creates special districts which allow only

selected uses. Historically, this approach has been applied to residential zones on the theory that it is a legitimate exercise of the police power to protect homes from non-residential intrusions<sup>6</sup>. Its application has been extended, in some instances, to create zones allowing only recreation and related open space uses. While a number of such zones have been invalidated on legal bases, others have been sustained. Perhaps the best known of these is a beach recreation zoning district in the City of Manhattan Beach, California. This ordinance restricted a stretch of ocean-front property to beach recreation purposes, allowing only the operation of recreational facilities for an admission fee<sup>7</sup>. The ordinance was upheld in the landmark McCarthy v. City of Manhattan Beach case, 4 Cal. 2d 879, 264 p. 2d 932 (1953); cert. denied 348 U. S. 817 (1954). While conditions peculiar to the McCarthy case place some limits on the scope of the decision's applicability, the outcome placed among the most substantial constraints on the use of private property of any case up to that time.

Another category of exclusive use zone consists of flood plain or flood hazard districts.\* The use of this type of zone has increased with more stringent state and Federal incentives and sanctions concerning development in flood prone areas. Uses permitted in flood plain zones may include parks, marinas or boat landings, and wildlife sanctuaries, and ordinances may explicitly list accommodation of recreation and related open space uses among its purposes<sup>8</sup>. Flood plain zones along coastlines subject to hazards created by wave action, storm tides, river overflows, and the like can allow these areas to be protected in a manner that will allow them to support public recreational pursuits.

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\*Refer also to the discussion of the National Flood Insurance Program contained in the Natural Hazard Areas Regulation section presented later in this report (Section 5.9B-6).

6 Hagman, Donald. Urban Planning and Land Development Control Law. Hornbook Series. West Publishing Co. St. Paul, Minn. 1971.

7 Duccsik, Donald. Shoreline for the Public. MIT Press. Cambridge, MA. 1974.

8. Ibid.

Courts have in recent years increasingly upheld zoning ordinances that restrict development in flood prone areas. Problems encountered in carrying out such ordinances includes: (1) definitions of flood hazard areas prior to the completion of necessary detailed investigations that are time consuming, costly, and often do not consider minor tributary streams; (2) how to deal with already existing non-conforming uses; and (3) how to control activities that, while not located in flood prone areas, may aggravate hazards downstream, or along other parts of the coast. States and localities are exhibiting increasing sensitivity to this latter problem, and a growing number of planning and regulatory programs are concerned with managing development activities in a fashion that will prevent the exacerbation of environmental hazards elsewhere.

Planned Unit Development (PUD) ordinances, cluster zoning, incentive zoning, and a variety of other related techniques have been attempted in various areas to increase the amount and utility of open space available when a site is developed. PUD's are probably the best known and most widely applied of these approaches, and have proven successful in securing more open space and recreational amenities than would occur under traditional zoning regulations. The key to the effectiveness of these methods lies in their administration, since the potential advantages they offer are based upon their flexibility, which allows development proposals to be specially tailored to individual site characteristics.

Another approach to shoreline land use controls is embodied in the establishment of setbacks. Setbacks delineate a building line imposed for such purposes as facilitating street widening. They may generally be applied along shoreline areas to preserve beaches and dunes, and for aesthetic purposes, although legal problems are likely to be encountered where private property owners are prohibited from making a safe and economic use of their lands<sup>9</sup>. Setbacks might also be successfully applied in natural hazard areas, such as along earthquake fault lines, or abutting hilltops or steep slopes<sup>10</sup>.

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9 Ibid, 1974

10 Hagman, 1971



Texas has a statute (V.A.T.S Art. 5415d) that enables coastal counties to establish dune protection lines. Where one of these lines is established recreational vehicles are prohibited from being used seaward of the line. The idea is to reduce or eliminate the destruction of the vegetated dunes that often accompanies the use of dune buggies and trailbikes.

Advantages: Through zoning, competition with other possibly incompatible resources is reduced if not eliminated. Planning and development can be approached in a more deliberate fashion.

Disadvantages: Zoning strategies concentrate use and as a result may generate new problems. Timing of institution of zoning is critical. If development has preceeded zoning, opposition will be especially strong, since uses to which land may be put were previously unrestricted, and may pose an economic hardship to landowners.

#### 5.5B Subdivision Regulations

Subdivision regulations offer additional opportunities for expanding public access to coastal recreational sites. Conditions, required dedications, payment of fees, and improvements are among the exactions that can be imposed for subdivision approval. Under most subdivision statutes, municipalities are authorized to impose ordinances that require dedication of land for streets and utilitites as a condition for subdivision approval. A growing number of municipalities have extended this requirement to the provision of parks or in lieu fees through so called park dedication ordinances. Forcing developers to bear the partial cost of providing parks for the recreational use of new residents is generally conditioned upon the fact that the need for such facilities is specifically attributable to the proposed development; however, where the need is a general one, the municipality must usually be responsible for the cost<sup>11</sup>.

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<sup>11</sup> Op. cit. Ducsik, 1974.



The park dedication concept has been further extended in coastal areas to propose that developers dedicate public easements for shore access where subdivisions would block existing or potential access. The California Coastal Zone Conservation Commission's Preliminary Coastal Plan calls for expanded utilization of powers that enable regulatory agencies to require either public access as a condition in subdivision or development approval, or where public access is not feasible or desirable, the payment of in lieu fees for the acquisition of access elsewhere. The Plan further calls for amendment of the State Subdivision Map Act to make such requirements mandatory.

The San Diego Coast Regional Commission has adopted special guidelines for bluff-top development which are designed to assure the retention of scenic vistas and provision of public access, while permitting private landowners "reasonable use" of their property<sup>12</sup>. The guidelines, which delineate certain environmental and aesthetic parameters within which bluff-top development may take place, are each accompanied by specific implementing policies.

Advantages: Park land and access acquisition keeps pace with development, and the cost is borne by development residents. No new public funds are required to maintain access.

Disadvantages: Public investment in park and access acquisition may be reduced.

#### 5.5C Official Map

Official mapping provisions comprise another kind of land use control for implementing plans. A municipality's official map gives precise locations of future streets within, and sometimes outside, its boundaries, and may also include park sites, and sites for other improvements<sup>13</sup>.

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12 Crandall, Tom. "Shoreline Development Controls and Public Access to the Ocean's Edge." Coastal Zone Management Journal. 1 (4):451-466. 1974

13 Hagman, 1971.

Incompatible or pre-emptive uses are prohibited at such sites. The application of official map designations to achieve coastal park and recreation objectives is limited, however, by time restrictions generally placed upon acquiring park sites.<sup>14</sup>

Advantage: Shoreland mapping might be useful in short-term acquisition programs.

Disadvantage: Shoreland mapping would probably be incapable of ensuring implementation of long-term acquisition plans<sup>14</sup>.

#### 5.5D Compensable Regulations

Compensable regulations represent a scheme to control development in open space areas that would be similar in effect to purchasing development rights<sup>15</sup>. Under such a system, property owners would be compensated for losses suffered as a result of use restrictions placed on their holdings. While compensable regulations offer certain advantages over the purchase of fee simple absolute or of lesser interests, such as easements, this approach has not yet proven feasible in widespread practice. Compensable regulations offer a potential new approach, but must be preceded by a thorough analysis of potential legal and economic ramifications.

Advantage: It reduces one of the major objections to zoning restrictions.

Disadvantage: It is too new and untried to yet be demonstrated as an effective land use control.

#### 5.5E Land Banking

Land banking is likewise a potentially promising, but as yet largely untested, approach to managing development. Land banking essentially involves the advance acquisition of land by the public for purposes of guiding future development. This mechanism has been applied in several major European cities.

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<sup>14</sup> Op. cit. Ducsik, 1974

<sup>15</sup> Ibid.

Advantage: It rationalizes the planning process by keeping alternatives open

Disadvantage: Fee simple acquisition of land is simply too costly for political entities

#### 5.5F Specialized Regulatory Programs

Cape Cod National Seashore and several subsequent additions to the National Park System provide examples of specialized regulatory activities to protect and enhance coastal recreation. Legislation that created the seashore in 1961 included a "formula" for reducing condemnation and acquisition requirements by adoption and enforcement of local land use controls meeting Federal standards (75 Stat. 284, 16 U.S.C. 4596-1). Public acquisition of all private land within the proposed boundaries might well have been prohibitively expensive, and would have engendered strong opposition by private landowners, and towns that received tax revenues from these lands<sup>16</sup>. All affected local jurisdictions adopted regulations meeting standards promulgated by the Secretary of the Interior, and few ordinance violations have taken place since that time. The threat of condemnation applied to nonconforming development has been an important tool in assuring compliance, however, suggesting that the application of this approach may be limited to situations where sufficient contingency funds are available to carry out condemnation provisions if they are necessary<sup>17</sup>.

Variations of the Cape Cod approach have been applied in several National Park System units established subsequent to the Cape Cod experience, and the National Park Service has promoted efforts to control development adjacent to parks throughout the system. No state or Federal agency has carried out a comprehensive program to survey, plan, and control development adjacent to parks, however<sup>18</sup>.

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16 Kusler, Jon. Public/Private Parks and Management of Private Lands for Park Protection. University of Wisconsin. Prepared for the National Science Foundation. NTIS PB-237 154. March, 1974.

17 Ibid.

18 Ibid.

Advantage: Regulatory approaches may achieve the same ends as fee simple acquisition at no cost and with lesser ill will toward the government agency involved.

Disadvantage: Individuals may voice the argument that if the public sector is going to regulate land use that they should purchase the land. A different kind of ill will is created.

#### 5.5G Comprehensive Coastal Water Management

Analogous programs for comprehensive management of the use of coastal waters have generally not kept pace with their landward counterpart. State coastal zone planners must face the challenge of developing management strategies for coastal waters that incorporate selected existing land use concept approaches designed to reflect the distinguishing characteristics of the aquatic environment. Some of the approaches attempted to date are described in Section 5.7.

#### 5.6 Distribution of Peak Demand Use Pressures

The tradeoffs involved in solving peak use pressures include provision of recreation opportunity for large adjacent populations and protection of recreation resource values. Peak periods of use may be one of the unavoidable prices to be paid in providing park, access and open space areas where the people are. Efforts to redistribute peak use periods need to be made within a framework of areawide recreation resource planning, site development, tourism promotion and public policy. Programs to redistribute peak use pressures need to involve the state outdoor recreation planning office (LAWCOM liaison), state and local park departments, the state tourism development agency and coastal zone management program working in close coordination.

There are several strategies for reducing peak recreational use pressures in the coastal zone:

- A. Better distribute recreational use in space by dispersing new recreation development.

Advantage: Temporary relief of congestion is achieved.

Disadvantage: Coastal recreation demand may be induced or self-fulfilled.



- B. Better distribute recreational use in time by spreading use to a longer season, or to other seasons by promoting new coastal activities and events.

Advantage: Temporary relief of congestion is achieved.

Disadvantage: Again, demand for expanded or new season may be induced, further intensifying the impact of peak periods.

- C. Do nothing about peak use pressures even though the area may be impacted (public recreation opportunities are of highest priorities).

Advantage: This policy may provide visible contrast between peak and non-peak periods, and in and of itself encourage gradual changes in use pattern.

Disadvantage: Park, access or open space area may be destroyed because of intensive peak use pressures.

- D. Divert excessive peak demands to non-coastal locations and activities through media promotion to keep use within known resource capability limits.

Advantage: Recreation resource protection is afforded by relating level of recreation use to resource capability.

Disadvantage: Local economic impact revenues are lost, leading to lessened public support in the locality.

- E. Relate transportation planning to coastal recreation planning so as to have a variety of delivery systems as well as comparable capacities.

Advantage: If capacities can be matched, some relief of peak use congestion may result.

Disadvantage: Resource protection goals may be secondary to economic impact and multiple use (other transportation purposes) goals.



- F. Develop a reservation system so that recreation resource capabilities can be enforced (limitation of use) in an orderly and equitable manner.

Advantage: If a reservation system is publicized and used, peak use pressures will be held in check and distributed throughout the state.

Disadvantage: Little is known about tradeoffs involved in a reservation system, and it may pose a socio-economic barrier to certain individuals and groups.

G. Other ideas

- Require at least four in each car to reduce parking impact during peak periods.
- Use differential fees to encourage use during non-peak periods.
- Explore other fee manipulations that shift use.

5.7 Water Use Management to Better Allocate Recreational Uses and Distribute Use Pressures

Solutions to water use conflicts can utilize both regulatory and non-regulatory techniques and strategies. Non-regulatory approaches include increasing shoreland access to reduce overall intensity of use, as well as creation of other inland water resources to increase total water space available. Activity markers, and distribution of informational materials can also be used to reduce conflicts.

Regulation of shoreland use can be used to alleviate recreational water use conflicts. For example, management regulations may prohibit the transportation and storage of motors on public parklands. This management technique is used extensively by the U.S. Forest Service to protect small delicate lakes, as well as to avoid water use conflicts with non-motorized craft. The result is as effective as not providing necessary facilities for a recreation activity. Shoreland zoning is not only useful for restricting the type, intensity, and manner of shoreland use, but can be used indirectly to regulate water usage or to avoid specific problems entirely.

Regulations can be established to: 1) restrict the type of uses which may be made of an entire water body or class of waters; 2) restrict the time period of certain uses so that uses can be phased throughout the day; and 3) restrict the nature, methods or times of use in particular areas of a body (surface water zoning). Surface water zoning alternatives include: 1) Fixed-Area Zoning; 2) Time-Area Zoning; and 3) Separation-Distance Zoning.

Fixed-area zoning restricts uses to specified areas. Some examples include restricting swimming to an area within 200 feet of the shore - (boats would be prohibited from this area except for slow ingress and egress) - and restricting water skiing or surfing to specific areas marked on a map. A buoy system can also be deployed to clearly mark swimming areas, surfing areas, traffic lanes, pier fishing areas, water skiing courses, and the like. Areas may be designated by general description, by maps, by regulatory signs and by buoys.

Time-area zoning is a kind of fixed area zoning where particular uses are prohibited in particular areas at specific times. For example, to avoid conflicts with fishing, water skiing or surfing might be prohibited in early morning and late evening hours. Efforts to implement this kind of zoning should be preceded by observation of uses at various hours to select the most natural means to resolve water surface conflicts.

Separation-distance zoning establishes a buffer distance between moving uses. An example would be that boats would be required to remain at a specified distance from anchored or trolling fishing boats to avoid interference or wake impact.

"Regulations which severely restrict public or private use of waters may be subject to a variety of attacks. Severe restriction of public use of waters may result in arguments that the restrictions conflict with federal navigation laws or interfere with commerce, violate provisions of the . . . (state) . . . constitution, or in some other manner unlawfully restrict public rights in navigable waters. . . . Judicial support can be found for

regulations adopted to a) protect health and safety; b) prevent deterioration of environmental quality by noise, destruction of aesthetic values, and the destruction of aquatic life; c) encourage the appropriate use of the water resource<sup>19</sup>."

## 5.8 Relocation of Competing Uses Not Dependent Upon a Coastal Setting

Many recreation and park system administrators articulate this concept regularly in an effort to relocate other competing uses not dependent on their coastal location. Unfortunately, this concept often gets lost in recreation, park and open space planning. Examples include the development of playgrounds and active participation areas (ball diamonds, tennis courts, basketball courts, etc.) in shoreland areas. These facilities can be located elsewhere and still meet local demands. In addition to relocating such facilities (when possible) and rehabilitating the area, every effort should be made to build this concept of coastal priority into the planning process

## 5.9 Intergovernmental Coordination

### 5.9A Integration of State Coastal Zone Management Programs and State Comprehensive Outdoor Recreation Plans (SCORP's)

State and local governments must make their recreation development and funding proposals consistent with a state's approved management program. Section 307(d) of the CZM Act provides that:

"State and local governments submitting applications for Federal assistance under other Federal programs affecting the coastal zone shall indicate the views of the appropriate state or local agency as to the relationship of such activities to the approved management program for the coastal zone. Such applications

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<sup>19</sup> Jon A. Kusler. Regulations to Reduce Conflicts Between Recreation Water Uses, Research Report #65. Madison, Wisconsin: Department of Natural Resources, 1970.

shall be submitted and coordinated in accordance with the provisions of Title IV of the Intergovernmental Coordination Act of 1968 (82 Stat. 1093). Federal agencies shall not approve proposed projects that are inconsistent with a coastal state's management program, except upon a finding by the Secretary that such project is consistent with the purposes of this title or necessary in the interest of national security."

The Act requires within-state consistency with an approved coastal zone management plan. Through OMB Circular A-95, states already have a procedure for circulating and reviewing federal funding applications. States need to integrate the coastal zone management program into this review procedure to insure that state activities under LAWCON and other funding programs are consistent with an approved coastal management plan. There are many as yet unresolved matters and considerations involved with securing within-state consistency with regard to other federally funded programs.

Beyond consistency requirements, there are many compelling arguments for a cooperative effort, and integration of state coastal zone management programs and state comprehensive outdoor recreation plans. First, statewide comprehensive outdoor recreation planning has been underway since 1965. Much of the insight and experience gained is directly transferable to development of a recreation element within a coastal zone management plan. . . . "There is no need to re-invent the wheel." The development of a state comprehensive outdoor recreation plan (SCORP) means that data relative to coastal recreation demand and supply is already available (in some form). Further, the public/private infrastructure for the provision of outdoor recreation has been developed.

Coastal recreation managers can regard SCORP's as broad brush or general planning (that usually must seek some balance between areas of the state). A coastal element of a coastal zone management plan may be more specific a plan, if desired.



The coastal plan can use existing SCORP data for baseline purposes, collect additional data to test SCORP findings and recommendations, establish policy for coastal recreation resource development and protection, and provide legitimation and support for increasing funding and technical assistance.

#### 5.9B Enhancing Complementary Aspects of Related Programs

As is true for other components of coastal zone management programs, a vital factor in achieving recreational objectives will consist of establishing effective coordination with other existing Federal, state and local programs, as well as with other units of government and the private sector. Coastal zone management efforts can facilitate the complementary operation of the plans and programs of these various groups, and assist in marshalling resources to enhance coastal recreation. Suggested in the following discussion are examples of opportunities for cooperative ventures with the potential to facilitate the achievement of coastal recreation objectives.

##### 1. Estuarine Sanctuaries

Federal regulations encourage multiple use of estuarine sanctuaries to the extent that such use is compatible with primary scientific and educational purposes, and relate that, ". . . it is anticipated that compatible uses may generally include activities such as low intensity recreation, fishing, hunting and wildlife observation. . ." (15 CFR 921.5). The Duplin River Estuarine Sanctuary recently established in Georgia, for instance, will continue to support existing recreational uses, including boating, fishing hunting and nature study<sup>20</sup>. In addition, the State of Georgia's application states that, "As more understanding is gained about the carrying capacity of coastal islands, limited recreational activities compatible with the research and education purposes of the sanctuary may be considered." If limited

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<sup>20</sup> Georgia Office of Planning and Budget. A Proposal to Establish a National Estuarine Sanctuary in the State of Georgia. In cooperation with the Board of Regents of the University of Georgia Dept. of Natural Resources. January 10, 1975.



recreational use is permitted, adequate steps will be taken to ensure that no significant disruption of the estuarine area occurs. For instance, if limited use of the beach is permitted, visitors will be transported to the island by ferry and to the beach by tram<sup>21</sup>."

Among the purposes of estuarine sanctuaries is assessing the effects of man's stresses on the ecosystem, and to forecast and mitigate possible deterioration from human activities (15 CFR 921.3). Research projects conducted at estuarine sanctuaries might include investigations concerning the impact of low intensity recreation activities upon estuarine ecosystems, and appropriate management techniques to mitigate these impacts.

## 2. Marine Sanctuaries

Marine sanctuaries may be established under provisions of Title III of the Marine Protection, Research and Sanctuaries Act of 1972 (16 USC 1434, 86 Stat. 1061) in any one, or combination of, five classifications, which include "recreational and esthetic areas" (15 CFR 922.10). Multiple use may be permitted in each classification to the extent the uses are compatible with the primary purposes for which the sanctuary is established. Marine sanctuary designations may include areas to complement and enhance public areas, such as parks, national seashores, national or state monuments, and other preserved areas (15 CFR 922.2).

The proposed Key Largo Coral Reef Marine Sanctuary off Florida's Atlantic Coast represents the recreational and esthetic area category, and is to be managed to protect and conserve the coral and coral reef ecosystems, to regulate uses of the area, and to provide a continuing opportunity for the public's recreational and esthetic enjoyment of the site<sup>22</sup>. Proposed uses of the area include

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<sup>21</sup> Ibid.

<sup>22</sup> Office of Coastal Zone Management. Key Largo Coral Reef Marine Sanctuary Draft Environmental Impact Statement. U.S. Dept. of Commerce, National Oceanic & Atmospheric Administration, August, 1975.

recreational boating and fishing, snorkeling and scuba diving, subject to rules and regulations formulated for managing the site.

The Key Largo proposal is representative of a coordinated effort to protect coastal recreational resources. The proposed site is contiguous with the existing John Pennekamp Coral Reef State Park, and establishment of the Key Largo sanctuary should facilitate effective management of the state park unit, and assist in preserving coral reef ecosystems for the enjoyment of present and future generations.

### 3. Wildlife Refuges

As noted in the description of U.S. Fish and Wildlife Service responsibilities, wildlife refuge systems support extensive coastal recreational use, especially for activities such as hunting, fishing and nature study. State coastal zone management programs should encourage cooperative efforts between state and Federal fish and game agencies, state and Federal park and recreation agencies, and other interests, both public and private, for effective enjoyment of recreational uses of refuges, and to plan for complementary land uses along their periphery.

### 4. Historic Areas

Section 303 of the Coastal Zone Management Act of 1972 (16 USC 1451, 86 Stat. 1281) declares a national policy to "encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic and esthetic values. . ."  
Visitation to and appreciation of historic resources in the coastal zone is clearly of recreational significance. As discussed in the description of National Park Service responsibilities, and particularly those that pertain to historic preservation, each state has a State Liaison Officer to supervise

historic programs, and must have a Statewide Historic Preservation Plan to receive Federal funds authorized by the National Historic Preservation Act of 1966 (16 USC 470, 80 Stat. 915).

Coastal zone planners should be cognizant of state and local historic preservation programs and encourage their compatibility with coastal zone management elements. Coastal zone management officials should likewise remain apprised of existing entries and potential nominations to the National Register of Historic Places. Provisions in the Coastal Zone Management Act for designating areas of particular concern, and for developing procedures whereby specific areas may be designated for the purpose of preserving or restoring them for their conservation, recreational, ecological or esthetic values afford new opportunities in managing historic resources.

#### 5. Scenic and Esthetic Resources

While comparable mechanisms for identifying and registering scenic and esthetic resources are not provided for by Federal law, opportunities similar to those for historic protection and restoration are presented by the Coastal Zone Management Act of 1972 (16 U.S.C. 1451, 86 Stat. 1280). A thorough treatment of coastal zone scenic and esthetic resources is presented in Aesthetic Resources in the Coastal Zone by Roy Mann Associates, Inc. (1975) in a report prepared for the Office of Coastal Zone Management. This report contains extensive recommendations for managing esthetic resources within the framework of state coastal zone management programs.

#### 6. Natural Hazard Areas Regulation

Low intensity recreational activities that usually cause negligible environmental impacts, and which require relatively little capital investment or maintenance expenditures, often comprise the most

appropriate uses for natural hazard areas where other land and water uses are precluded. Efforts to coordinate open space and recreational planning with measures to reduce damages from flooding have been enhanced by provisions in the National Flood Insurance Program administered by the Department of Housing and Urban Development's Federal Insurance Administration. This program provides incentives and sanctions for local units of government to control development in identified flood prone areas.

The Flood Disaster Protection Act of 1973 (87 Stat. 980, 42 USC 4001) extends coverage to losses resulting from erosion caused by flooding and undermining of shorelines, in addition to direct flooding and mudslide damages. Regulations proposed to implement the act define erosion as, "the collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or current of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding," (24 CFR 1909.1). Erosion area or erosion prone area is defined as "a land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high water levels or wind-driven currents, is likely to suffer flood-related erosion damage" (24 CFR 1909.1).

When the Administrator of the Federal Insurance Administration has delineated the areas having special flood-related erosion hazards within a community, the community must: require the issuance of a permit for any grading, fill, dredging, excavation or construction in the area of flood-related erosion, and will ensure that it will not cause any changes in barrier beaches, sand dunes, natural drainage channels, soil infiltration capacity, or otherwise aggravate the existing erosion hazard; and require a setback for all new



development from the ocean, lake or riverfront, to create a safety buffer consisting of a natural vegetative or contour strip. This buffer may be used for suitable open space purposes, such as picnic, agricultural, forestry, outdoor recreation, and wildlife habitat areas, and for other activities using temporary or portable structures only (24 CFR 1910.5).

The strong sanctions that characterize the Federal Flood Insurance Program have broad implications for coastal zone management and park and recreation efforts. By providing a mechanism for limiting development in various types of flood hazard areas, recreational opportunities in these areas are increased. Coordination between state and local authorities regarding the management of these areas should include input from coastal zone management and flood insurance officials, planners, and park and recreation program managers.

## 7. Local Park and Recreation Programs

Consistency and coordination provisions of the Coastal Zone Management Act cited repeatedly throughout this report are especially applicable to local park and recreation plans and programs. Such plans and programs, in concert with State Comprehensive Outdoor Recreation Plans, should provide coastal zone planners with an information base which identifies existing and potential recreational sites, park and recreation needs, and initiatives underway to meet these needs. Coastal zone management programs can provide reinforcement and support of local efforts, as well as enhancement of regional and statewide perspectives.

## 8. Other Programs

Numerous other programs described in the discussion of Federal Responsibilities, and other sections of this report present outstanding opportunities for



mutually beneficial coordination efforts that would enhance coastal recreation. These are complemented by a diverse array of new and evolving programs that also can make a positive contribution toward coastal recreation pursuits.

Indicative of such emerging programs are efforts by the U.S. Environmental Protection Agency's newly created Office of Land and Water Use Coordination to foster installation of new waste water treatment facilities on a demonstration project basis, for cleaning up polluted waters to the extent that recreational opportunities can be expanded. Selected coastal areas located near large urban population concentrations represent promising sites for applying this approach in terms of maximizing user benefits.

#### 5.10 Public Participation

The Coastal Zone Management Act (16 U.S.C. 1451, 86 Stat. 1280) clearly establishes a framework for program development and administration that is designed to provide ready access for all affected agencies and individuals in both the public and private sectors. These concerns are expressed in Section 306(c), which sets forth requirements that must be satisfied prior to program approval. These requirements state that the Secretary of Commerce shall find". . . The State has developed and adopted a management program for its coastal zone. . . after notice, and with the opportunity of full participation by relevant Federal agencies, state agencies, local governments, regional organizations, port authorities and other interested parties, public and private . . ." The section also requires the state to hold public hearings in the development of the coastal zone management program.

Regulations (15 CFR 923.31) promulgated to implement the act provide amplification by stating that: "The submission of the management program shall be accompanied by a list identifying the(se) agencies and organizations . . . the nature of their interest, and the opportunities afforded such agencies and organizations to participate in the development of the management program . . ." and that: "It is the intent of these requirements for coordination with governmental and private

bodies to assure that the state . . . is aware of the full array of interests represented by such organizations, that opportunity for participation was provided, and that adequate consultation and cooperation with such bodies has taken place and will continue in the future."

While programs dealing with recreation and public participation must necessarily be tailored to the specialized needs of individual states, attempts to garner public involvement for recreational considerations should take place within the context of the overall coastal zone management program. Obtaining effective public participation in coastal zone, and particularly coastal recreation planning poses special challenges in identifying and reaching potentially affected groups and individuals. In addition to local residents, recreational users are often predominantly from outside the coastal zone, and at times, from other states altogether. Another category is composed of groups, both within and outside the coastal zone, that do not participate in coastal recreation activities due to the barriers described earlier in this report. These individuals possess "latent demands" as revealed in the discussion of Activity Demand in Section 4.3B, that would be overlooked in projections based upon past use levels.

Other groups which may be affected by, or have an interest, in coastal recreation include: business enterprises which serve, or might serve recreationists; local residents who might be adversely affected by visitors and their activities; industries and trade associations which might benefit, or represent groups that might benefit from coastal recreation pursuits; and interest groups or professional associations that may or may not benefit directly from efforts to enhance coastal recreation. This latter category would include various environmental interest groups, professional associations concerned with recreation, and membership organizations, local, regional, or national in scope, composed of such groups as surfers, divers, fishermen and boaters.

Two fundamental prerequisites for successful participation programs consist of: (1) informing the public with a clear and accurate description of issues and programs; and (2) involving the public as active interests in the planning and decision-making process. Means of imparting information, and securing and maintaining effective participation might include: newsletters, brochures, and related printed and graphic aids; media use, including newspapers, periodicals, television and

radio; interviews and surveys; special information services, such as toll free telephone access to coastal zone management program offices; workshops, forums and seminars; presentations before, and cooperative efforts with civic, academic, and other groups; the formation of citizen advisory committees; and public hearings.

The key to obtaining effective public participation for coastal recreation lies in establishing and maintaining a mechanism for reaching the divergent and widely distributed array of potentially affected groups. Each state must develop a program that incorporates input from as broad a spectrum of interests as is practicable, and should be sensitive to recreation participation patterns that often transcend state lines.

#### 5.11 Dealing with Impacts of Expanded Public Access to the Shoreline

Two alternative approaches appear clear. If open access is regarded as more important than resource quality, management faces an enormous task including littering and continuous rehabilitation of site quality. Given these impacts, it's almost inevitable that the site be hardened with construction materials, i.e., blacktop, concrete, wood planking, raised trails, etc., in order to extend resource recreational carrying capacity to necessary limits.

If managers are not willing to move in this direction, then the task becomes one of "un-doing" some of the developed access so that access is related to desired resource impact levels. Experience at public hearings has shown that it's more difficult to eliminate public access than to create it. Straight-forward efforts to reduce public access in the name of resource protection will run into opposition from all quarters unless the message is told clearly and concisely. Even with adequate communication, the political perils are enormous.

Another approach to reducing access involves more indirect and more natural means, i.e., capitalize on road and bridge washouts and other physical barriers to reduce use; reduce or eliminate certain maintenance or services (those that cannot be construed as acts of negligence); publicize natural hazards (snakes, "man-eating" sharks, cactus, cliffs, etc.); publicize



other nearby areas; and other manipulations of information. Because of the sensitivity to public access, and because most people are unable to perceive degrees of access ("it's either open or closed"), these latter means may prove more useful to reducing use to more acceptable levels.

The impacts of expanded (and over-expanded access) may be so extensive that an entire community may be affected. If contingency planning has not preceded access development, it may be difficult to reconcile impacts. Potential impacts may be mitigated through community planning where environmental and economic impacts may be predicted and considered.

## 5.12 Recommended Selected Readings

- Armstrong, J., et al. Coastal Zone Management: The Process of Program Development. Sandwich, Massachusetts: Coastal Zone Management Institute, 1974, pp. 124-133, 152-164.

(This document is intended to serve as a Technical guide to state and local officials involved in the development and implementation of coastal zone management programs.)

- Binnewies, Robert O. "Acadia: Public and Private Preservation." National Parks & Conservation Magazine. 49(4): 4-9. April, 1975.

(Discusses public and private efforts involved in and adjacent to Acadia National Park.)

- Ducsik, D.W. Shoreline for the Public - A Handbook of Social, Economic, and Legal Considerations Regarding Public Recreation Use of the Nation's Coastal Shoreline. Cambridge, Massachusetts: The MIT Press, 1974.

(See pp. 87-136 for a review of seashore law and discussion of common law and public rights, and pp. 137-151 on shoreline acquisition difficulties, methods and strategies.)

- Eckhardt, Robert C. "A Rational National Policy on Public Use of the Beaches." Syracuse Law Review. 24(3). Summer, 1973.

(Builds upon the Texas Open Beaches Act to make points relative to the national shoreline.)

- Gunn, C.A., et al. Development of Criteria for Evaluating Urban River Settings for Tourism-Recreation Use, Technical Report No. 56, College Station, Texas: Texas Water Resources Institute, 1974.

-Gunn, C.A., et al. Development of Criteria for Evaluating Urban River Settings for Tourism-Recreation Use, Technical Report No. 56, College Station, Texas: Texas Water Resources Institute, 1974.

(Reports on nationwide study of waterfront areas to develop criteria for future development)

-Kamp, B.D. Open Space Acquisition and Control - Selected Techniques for Political Subdivisions. College Station, Texas: Department of Recreation and Parks, Texas Agricultural Extension Service, n.d.

(Reviews and evaluates commonly used practices for acquiring open space.)

-Kusler, J.A. Regulations to Reduce Conflicts Between Recreation Water Uses, Research Report #65. Madison, Wisconsin: Department of Natural Resources, 1970, 283 pp.

(A definitive document on regulation of conflicting water uses, constitutionality of such regulations, methods of regulation, and sample ordinances from throughout the United States.)

-McHarg, I.L. Design with Nature. Garden City, N.Y.: Natural History Press, 1969.

(Reviews McHarg's philosophy, approach and tools for regional analysis and planning.)

-Mott, W.P. "Carrying Capacity," in Proceedings of the 6th Recreation Management Institute. College Station, Texas: Department of Recreation and Parks, Texas A&M University and the National Park Service, 1974, pp. 10.1-10.8.

(Mott discusses carrying capacity as utilized in managing the California State Parks System. His discussion of the California Park reservation system is particularly interesting.)

-Strong, Ann Louise, Preserving Urban Open Space. Washington, D.C.: Urban Renewal Administration, 1963.

(Reviews rationale and techniques for acquiring and preserving open space areas.)

-Wager, J. Alan. "Recreational Carrying Capacity Reconsidered." Journal of Forestry. 1974. 72(5): 224-278.

(Another discussion of recreational carrying capacity.)



-Stankey, George H., & David W. Lime. Recreational Carrying Capacity: An Annotated Bibliography. U.S.D.A. Forest Service General Technical Report INT-3. Intermountain Forest and Range Experiment Station. Ogden, UT. 1973.

(A useful source document for carrying capacity literature.)

SECTION 6

SELECTED STATE PROGRAMS



## 6. SELECTED STATE PROGRAMS

The following section describes selected state programs, including a statement of key coastal recreation issues and problems, and efforts undertaken or envisioned to deal with them. The states described were selected with the intent to provide a cross-section of varied approaches; illustrate geographic diversity; and simultaneously, portray the commonality of certain critical problems faced throughout the nation. These descriptions are drawn from materials submitted by the states themselves and are intended to be informational, rather than endorsements of particular efforts.

### 6.1 Illinois

The combination of coastal zone issues in Illinois is uniquely different from other coastal states. The fifty-nine mile Illinois shoreline is predominantly urban, and with minor exceptions, entirely incorporated within fourteen municipalities. Traditionally, the citizens of Illinois have valued this shoreline as an extraordinary asset, and there is perhaps no other comparable urban shoreline which has received as much attention, planning effort and regulatory control. However, there are many significant, unresolved coastal problems including the following coastal recreation issues:

- public access to the shoreline;
- insufficient number of recreation harbor-marina facilities;
- severe beach erosion;
- degradation of water quality;
- intense competition for, and frequent conflicting utilization of, coastal resources.

The information and data collection and analysis elements of the first year CZM work program revealed several constraints and opportunities for recreational resource management in the coastal zone. These include:

- historical respect for an appreciation of the Lake Michigan shoreline recreation amenities;
- recreational demands compete with residential, commercial and industrial demands for coastal resources;
- existing recreational lands are subject to constant development pressures;

- access to shoreline north of Chicago is very restrictive to non-lakeshore community residents;
- intense support exists for retaining local control of municipal beaches and facilities;
- North shore communities charge fees for access to public beaches, and these fees are greater to non-residents;
- the state, with local cooperation and assistance, must develop innovative techniques to provide additional access and recreational opportunities.

The state and lakeshore municipalities have addressed several of these issues in the past with varying degrees of success. The following is a brief list of these coastal recreation activities:

- the City of Chicago has an extensive lakefront park system, and in 1973 it adopted the Lakefront Plan and Lakefront Protection Ordinance which provide for the expansion and protection of the lakefront park system and control over adjacent private development;
- other lakefront municipalities have recently adopted comprehensive plans which emphasize public open space along the shoreline;
- the State of Illinois has been active in decisions pertaining to Lake Michigan and has conserved an eight mile segment of the shoreline as a state park and nature preserve;
- water pollution abatement programs of shoreline municipalities are presently eliminating all effluent discharges to the lake.

## 6.2 Florida

The major problem concerning coastal recreation in Florida is the tremendous competition between the private and public sectors for the coastal land still available for recreational purposes. Florida has approximately 1,160 linear miles of beachfront. Of this, 350 miles had been developed for private use as of 1972; more have been developed since that time. Of the 810 miles of undeveloped beach front in 1972, 476 were privately owned, with 334 miles in public ownership. Much of the publicly owned beachfront is included in Federal military reservations (i.e., Eglin AFB, Kennedy Space Center, etc.), and therefore is not accessible for recreational use. Designated public recreational beaches amount to less than 200 miles.



State and local agencies have attempted to purchase coastal areas for recreational purposes, but in the most highly desirable areas of Florida's coastal zone, costs are prohibitive, and in many instances, beaches are unavailable for purchase. In many of the high density areas of the coast, privately owned waterfront land extends to such a length that there is, in effect, no public access to the state owned land below the mean high tide line. In some areas, this lack of public access has resulted in the blocking of requests for beach restoration projects.

Much of Florida's economy is based on tourism: over 25,000,000 tourists visited Florida during 1974. In addition, nearly 50% of the over 8,000,000 residents go to the beach, with the per capita annual participation rate for beach activities at 17. This results in over 146,000,000 resident beach user-occasions per year, which, when coupled with 114,000,000 tourist user-occasions, generated in excess of an estimated quarter of a billion beach visits during 1974. Large increases are expected in succeeding years due to the rapid population increase and tourism growth. Thus, Florida finds itself in the unenviable position of being caught between decreasing resource availability and increasing demand. This, in turn, could result in a decrease in tourism which is the backbone of Florida's economy. Consequently, it is imperative that every effort be made to place as much beach land as possible under public control for recreational purposes. One of the primary goals of the coastal zone planning program in Florida is to develop a plan which will assist in providing citizens and tourists alike with adequate coastal recreation opportunities.

The coastal zone planning program, up to the time of receiving the first Federal grant, had not addressed specifically the problems of coastal recreation except to map in its biophysical inventory existing recreational areas and parcels of undeveloped and developed beachfront. Work currently in progress will refine the inventory and will also inventory and address recreational facilities and opportunities as part of the socio-economic analysis of the state's coastal zone. The planning analysis which will occur during the second Federal grant-year will present recommendations for recreational activities in specific areas of the state's coastal zone. Many of these recommendations will be based on the findings and projections of the State Outdoor Recreation Plan that is now being developed by the Division of Recreation and Parks, Department of Natural Resources, and will be available in the middle of 1976.

### 6.3 Wisconsin

Key coastal recreation issues and problems in Wisconsin include:

- 43.34% of total Wisconsin population lives in the fifteen coastal counties.
- 14.7% of the entire Wisconsin Great Lakes shoreline provides for public access through public ownership. High costs for shorelands in urban areas restrict further acquisition, and low water quality and erosion at some existing parks and scenic sites limit their use.
- Second home and large scale recreational developments are located increasingly on coastal shorelines, but little is known about their potential costs and benefits to the local community.
- Predicted recreation demand will exceed the supply of marinas, beaches, harbors of refuge, boat launchings, etc.

During its first year program, Wisconsin completed an inventory of all public facilities; developed overall demand projections for 1980, and initiated work on projections for 1990 and 2000; began a survey of demand for specific activities (boating and fishing facilities); completed an evaluation of overall county benefits from recreation, and started work on separating coastal civil towns from the remaining parts of the counties; and inventoried existing state policy and funding mechanisms. The second year program calls for completing unfinished projects undertaken during the first year, as well as an investigation of fiscal impacts and trends in second home condominium and major recreational developments; an analysis of existing policies; and an assessment of specific needs for modifying existing policies and establishing new ones. Particular emphasis will be afforded to providing recreational opportunities to less affluent and less mobile citizens.

Three state policy objectives are being explored under the coastal program for recreation-tourism:

- 1) To encourage the development and promotion of needed public and private recreation facilities.

- 2) To promote sound resource use and management programs in public and private recreational development.
- 3) To develop public assistance and planning programs that lead to cooperative effort by public and private interests in carrying out the orderly development and distribution of needed recreational services and facilities.

The resources of several on-going projects have been combined to concentrate on the coastal zone issues. The Department of Natural Resources has the responsibility to acquire public recreational land and public access to all state waters and to manage sport and commercial fishing as well as hunting, trapping, etc. The University of Wisconsin-Extension, Recreation Resources Center recently completed a major study, Upper Great Lakes Regional Recreation Planning Study, funded by the Upper Great Lakes Regional Commission. The Bureau of Tourism, currently being transferred from the Department of Natural Resources to the Department of Business Development, has been conducting a statewide study using gross business sales, traffic counts, employment and license use in an attempt to estimate recreation-tourism activity in each county on a monthly basis.

Staff from each of these projects work together on the two coastal zone policy issues, public access and economic impact of recreation. They are advised by the overall coastal zone staff group and by four technical advisory groups which represent local elected officials, regional planners, local recreational groups and recreation equipment and development businesses.

The University of Wisconsin, Sea Grant Program has several informational programs which present coastal issues to the public. The Earthwatch/Wisconsin Series, a service of the Sea Grant Program and the Institute for Environmental Studies, has produced a report on the shortage of Wisconsin shoreline, for instance.

#### 6.4 Oregon

Reports prepared during the inventory phase of Oregon's program development established recreational activity and resource classification systems, and provided an analysis of

the tourism and travel sectors of the coastal economy. In addition, an estuarine inventory, and an inventory of development pressures also included recreational factors in their analysis. The inventory studies include an identification of additional work necessary to further develop an understanding of coastal recreation.

The information needs generally relate to:

- 1) determination of social costs and benefits associated with development of recreation areas and facilities;
- 2) application of the carrying capacity concept to recreation activities and resources; and
- 3) accurate profile information on recreation participants, both in terms of coastal residents and non-residents.

Key concerns expressed at public workshops and hearings held in developing the Oregon Coastal Zone Management Program have included access to coastal zone shorelands; off-road vehicle use and impacts; and the revenue implications of private vs. public ownership of recreation areas and facilities with respect to the tax base of local governments. These concerns are addressed in a series of Oregon Coastal Conservation and Development Commission policy packages dealing with 1) Uplands; 2) Beaches and Dunes; 3) Fish and Wildlife; 4) Freshwater Resources; 5) Estuaries and Wetlands; and, 6) Shorelands.

Each of these categories contains recommended policy statements that attempt to deal with problems identified. In addition, statewide planning goals, which are to guide the development of comprehensive plans by local units of government, provide for the explicit consideration of recreation needs.

## 6.5 Rhode Island

The coastal area in Rhode Island provides a major portion of current and potential recreational opportunities available to the state and its communities. For this reason it has become a fully integrated component of all recreation plans. Over the years specific studies have been generated to address problems, or put forth proposals for better utilization of this valuable natural resource. Some of the more recent efforts include:



1. Plan for Recreation, Conservation and Open Space  
(January, 1971).
2. Plan for Recreation, Conservation and Open Space -  
Supplement (June, 1973)
3. Public Rights-of-Way to the Shore (March, 1970).
4. A Proposal for a Bay Island Park
5. Shore Region Land Use Plan
6. Natural Areas in Rhode Island

In addition to these specific studies, various existing conditions, needs, and recommendations relating to the coastal zone are being incorporated in the state's updated outdoor recreation plan. This updated plan will replace the first two items listed, and will be released for distribution in December, 1975. The inventory of existing outdoor recreation facilities, including boat launches, marinas, conservation areas, salt water beaches and other complementary and supportive facilities which contribute to the recreational experience in Rhode Island, has been compiled. An assessment of the need for outdoor recreation facilities has been completed based on three inter-related demand surveys conducted during the past year. Data from these surveys has been compared to the existing supply of facilities to determine present deficiencies, and is being used in a forecasting model to project future demand for specific recreation activities. Presently, demand data for summer-oriented activities has been completed, with additional data on fall and winter activities to be completed and interpreted during the next fiscal year. These surveys are outlined in a Technical Paper entitled "Rhode Island Recreation Surveys," (January, 1975).

The lack of good access to the shore via publicly owned land contributes to the problem of developing adequate recreation facilities in the coastal area. Proposals for alternate means of providing access have been examined, including easements secured by local and state government, and increased coordination with the private sector, to gain a more complete utilization of commercial facilities.



Legislation designed to protect fragile wetland areas in the state has had its effect on the coastal area. Conflicting uses in the coastal zone have also been identified, and an evaluation of the area using a grid system comprised of ten acre cells has become the foundation for a shore region land use analysis (previously listed as item 5).

## 6.6 Hawaii

Hawaii's shoreline has always been the focus of recreational activity. As a resource zone, it not only provides access to the sea for swimming, diving, surfing, fishing, and boating, but is also a much sought-after setting for resort development, residences, commerce, and industry. As in the forests, multiple objectives are expressed for the highest and best use of the shoreline.

While the commercial values of the sea have been recognized for mineral deposits, food, and precious materials like coral and shells, recent attention has been focused toward the sea for energy resources.

Major coastal zone planning problems involve the provision of recreational opportunities. The extent of marine recreation facilities within the State of Hawaii has been well documented in the State Comprehensive Outdoor Recreation Plan (SCORP). Legal access, rights of ownership, and ownership of coastal properties are crucial constraints upon public use of the State's shoreline for recreation. State law clearly specifies that beaches belong to the public and, as such, should always be available for public use. But the "effective" shoreline for public recreational use is much less than the total shoreline.

Legal impediments arising out of private and military holdings vastly reduce the amount of shoreline for public uses. In addition to this, roughly one-half of the State's shoreline is inaccessible due to physical features. As such, the relative scarcity of marine recreational resources and increasing pressure put on the shoreline for recreational and non-recreational opportunities is a key public issue.

As use competition continues to mount, recreation demands have likewise grown in magnitude. Of the 935 miles of shoreline, 185 miles have sandy beach, and 37 miles are generally accessible for public recreation use.

The shoreline is a finite resource, so that its ability to accommodate recreation activity is also finite if acceptable levels of user satisfaction are to be maintained.

At present, SCORP is being expanded and updated under the guidance of the Department of Planning and Economic Development. The final product will be available during FY 75-76 and will be integrated with the efforts of the CZM second-year program.

## 6.7 Maryland

Of the five major goals the Maryland Coastal Zone Management Program has identified as shaping its primary thrust "preservation and enhancement of public use and enjoyment of coastal resources" is one of the most important. At present, only approximately 3% of Maryland's 4000 miles of shoreline are in public ownership, and accessible.

For these reasons, enhancement of the public use and enjoyment of coastal resources will be a major objective of the Maryland Coastal Zone Management Program. One step towards fulfilling this goal has already been taken by the Maryland Legislature. During the 1975 session, an act was passed establishing a construction setback line for the dunes in the Ocean City area, thus preserving them for recreational uses.

Another program to increase public access to Chesapeake Bay waters is now being planned by the Division of Land Planning Services and the Coastal Zone Management Program. A plan is currently being developed by the two sections to establish a series of small water-oriented parks on both the Eastern and Western Shores of the Bay. This will be a big step toward improving Bay area recreational opportunities.

Recreational boating is one of the most popular uses of the Chesapeake Bay and its tributaries. In 1971 over 54,000 boats were registered in Maryland bayshore counties. Increased participation in recreational boating in recent years has resulted in problems concerning boater safety, conflicts of boating activities with other uses, and adverse environmental effects caused by boating and its associated land-based facilities. In addition, the state's waterway improvement program is in need of information relating to the siting of major new state boating facilities. County governments also need technical assistance in regulating the siting of private boating facilities.

In order to address these problems, the Maryland Coastal Zone Management Program currently is conducting a Recreational Boating and Carrying Capacity Study that is nearing completion.

This is a two phase study, which has been contracted to Roy Mann Associates. The general approach taken in Phase I was to define, classify and quantify the limiting factors relating to boating impact on the biophysical resources of Chesapeake and Chincoteague Bays, and to develop boating use carrying capacity analysis. The analysis will lead to development of a manual in Phase II designed to be used by planners and officials of Maryland at the State, county and local levels in regulating boating activity, and related facility location and design. In addition to the manual, other outputs of the Phase I study included (1) an annotated bibliography of materials relating to all aspects of possible boating impacts; (2) a biophysical checklist ranking and showing the relationships of the impact factors related to recreational boating; and (3) a set of 1:62,500 scale maps identifying the location of the various biophysical factors sensitive to boating impacts. The objectives of Phase II will be to take the information and carrying capacity criteria developed in Phase I, and apply them to specific sub-areas of Chesapeake and Chincoteague Bays in order to: (1) identify areas of boating under- and over-utilization; (2) evaluate potential boating impact management techniques; (3) evaluate existing boating regulations, and (4) identify specific boating facility locations, design and cost criteria.

A second ongoing study which will provide an input into Maryland's long-term coastal recreational planning is the "Inland Natural Areas Study." This is a two-year study designed to provide site specific information on critical areas of potential state or regional significance. This study will provide information on 400 to 500 areas on Maryland's Eastern Shore which will be used to evaluate the potential recreational use of these areas, as well as other uses. This is the first comprehensive field study of this type in Maryland, and should provide a valuable input into long-term planning for the acquisition of areas for parks, wildlife management, and related activities.

## 6.8 California

California's 1,072 mile shoreline (excluding San Francisco



Bay and offshore islands) is approximately 61% privately owned, and 39% publicly held. A significant portion of the public holdings, and particularly those controlled by the Federal government, are not available for public recreational use, however. Roughly 85% of California's population resides within 30 miles of the ocean, leading to massive use pressures, especially in the heavily populated and climatically mild southern part of the state.

In November, 1972, California voters approved Proposition 20, the California Coastal Zone Conservation Act, which created six Regional Coastal Commissions and a State Commission to:

- (1) prepare a plan for the California Coastal Zone; and
- (2) regulate development during the plan's preparation to insure that any actions taken be consistent with the intent of the Act.

Recreation and Public Access are two major elements of the California Preliminary Coastal Plan released during 1975. The plan, a composite of the six regional efforts, offers a comprehensive array of implementing policies. Among those policies generated for achieving recreational objective are:

- The potential for each shoreline property for possible recreational use shall be evaluated before any development that would foreclose such opportunities is permitted.
- The use of private lands for visitor-oriented development, such as commercial recreation and support facilities shall have priority over private residential, general industrial, or general commercial development, except for agriculture and coastal-dependent industry.
- A centralized statewide reservation and use monitoring system for overnight recreational facilities should be instituted by public recreational agencies, eventually including all public and private facilities
- Coastal- and water-dependent activities shall have priority in the shoreline area, and recreational activities and support facilities that do not have to be located on the immediate shoreline shall be located inland, and connected to the coastline by trails, bicycle paths, shuttle buses, or trams.
- The amount of new development shall be correlated with precise open space acquisition and recreational use plans prepared by local agencies.

- The designed capacity of roads, parking areas, and other support facilities shall be kept within the environmental carrying capacity of the natural resource.
  - A long-range program to protect coastal recreational resources from over-use shall be established jointly by the coastal agency and other public recreational agencies, and the foundation for this program shall be the designation of four classifications of coastal use zones: (1) Intensive Use, (2) Moderate Use, (3) Light Use, and (4) Remote.
  - A coastal reserve system should be established to protect valuable natural, historic, and archaeological resources of the coastal environment consistent with resource protection.
  - Hiking, bicycle, and equestrian trails should be established as a continuous system along the coast.
- Policies set forth in the Public Access Element include:
- The rights of public use of the coastline shall be effectively guaranteed, and to this end, development shall not be permitted to interfere with traditional public use, and legislation broadening the public's legal rights should be passed.
  - Public access from the nearest public throughfare to the coastline shall be provided in, and where appropriate, separated from new developments.
  - The long-term goal (possibly 50 or more years away) of all coastal zone planning and development should be public ownership of, and public access to a strip of land paralleling the coast.
  - Until lands designated for public acquisition can be secured, they shall be protected from development and from abuse through public regulatory powers, and property taxes should reflect this limitation on their use.
  - Access to the coast for persons of all income levels, ages, and social groups shall be maximized, and developments that provide recreational and residential access for the general public over a wide range of income levels shall have priority over other private development.



The Preliminary Coastal Plan also includes regional amplifications that reflect specialized concerns in the state's diverse regions, as well as sub-regional considerations for certain areas of the coast experiencing complex development problems.



SECTION 7

PROPOSED LEGISLATION



## 7. PROPOSED LEGISLATION

This section is intended to be purely descriptive in nature, and has been included to bring readers up to date with pending legislative proposals, should any of these measures be enacted into law. Proposed legislation is subject to frequent revisions, and descriptive summaries are often quickly outdated. Interested parties are encouraged to contact OCZM or sponsoring legislators to determine the updated status and composition of the legislation described, and other new bills introduced.

Several bills currently under consideration by the Congress include provisions with substantial ramifications for coastal recreation planning and management. Of perhaps the most direct consequence would be amendments to the Coastal Zone Management Act (86 Stat. 1281, 16 U.S.C. 1451) contained in S. 586, which has passed the full Senate.

Section 305(b) is expanded to include a definition of the term "beach", and a general plan for the protection of, and access to, public beaches and other coastal areas of environmental, recreational, historical, esthetic, ecological and cultural value, among state program requirements. This requirement would not have to be met until September 30, 1978, however. A new Section 320(a)(6) authorizes \$50 million per year through September 30, 1985 for the acquisition of lands to provide for the protection of, and access to, public beaches, and for the preservation of islands. In addition, the Coastal Energy Facility Impact Program that would be created by an amended Section 308 authorizes loans or grants to states for projects which are designed to provide new or additional public facilities and public services made necessary by energy-related activities or facilities. Such public services and facilities, as defined in an amended Section 304, include recreation.

HR 3981 is the House counterpart of S.586, and is currently being deliberated by the House. S. 586 is sponsored by Senator Ernest Hollings of South Carolina, while H.R. 3981 is sponsored by Congressman John Murphy of New York.

A number of proposals have been introduced to amend the Land and Water Conservation Fund Act of 1965 (16 U.S.C. 460d) and the Historic Preservation Act of 1966 (80 Stat. 915, 16 U.S.C. 470). The principal measures are H.R. 2763, sponsored by Congressman Roy Taylor of North Carolina, and S. 327, the Senate counterpart, sponsored by Henry Jackson of Washington and J. Bennett Johnston, Jr.



of Louisiana. These proposals would increase the annual Land and Water Conservation Fund authorization from \$300 million per year to \$1 billion. They would also create a National Historic Preservation Fund, with a \$150 million annual authorization.

H.R. 2763 is essentially identical to a bill introduced last year which was reported by the Committee on Interior and Insular Affairs in the 93rd Congress, but which was not acted upon by the full House prior to adjournment. Hearings have been held during this session, but as of this writing, neither H.R. 2763 nor S. 327 has been reported out of their respective committees.

Congressman Robert Eckhardt of Texas, a chief proponent of "open beaches," has introduced a National Ocean Beaches bill (H.R. 1676). This legislation, which is modeled after the Texas Open Beaches Act of 1959 authored by Eckhardt while a state legislator, would establish a national policy for beach resources in the U. S., would affirm public rights to beach access, and provide funds to assist in carrying out the Act. To date, no hearings have been scheduled on this bill.

APPENDIX I

CLASSIFICATIONS OF COASTAL RECREATION

ACTIVITIES



## APPENDIX I

### Classifications of Coastal Recreation Activities

Table 1. Classifications of Coast-Oriented Outdoor Recreation Activities  
by Environmental Use

1. Activities using nearshore waters:
  - a. Ocean Sailing
  - b. Ocean Power Boating
  - c. Surfing
  - d. Swimming
2. Activities using fauna and flora of nearshore waters:
  - a. Ocean Fishing
  - b. Shore Fishing
  - c. Scuba and Snorkel Spear Fishing
  - d. Scuba and Snorkel Biological Observation
  - e. Scuba and Snorkel Shellfish Collecting
3. Activities using rocky, gravel and mud tidelands:
  - a. Biological Observation
4. Activities using fauna and flora of rocky, gravel, and mud tidelands:
  - a. Wildfowl Hunting
  - b. Shellfish Collecting
  - c. Biological Observation
  - d. Shore Fishing
5. Activities using sandy tidelands:
  - a. Beaching (includes sunbathing, beachcombing)
  - b. Clamming
  - c. Horseback Riding
6. Activities using flora and fauna of sandy tidelands:
  - a. Biological Observation (especially shorebirds)
7. Activities using sand dunes and above-water beaches:
  - a. Beaching (includes sunbathing, Beachcombing, picnicking, etc.)
  - b. Dunebuggies
  - c. Camping
  - d. Recreational Housing
  - e. Horseback Riding
8. Activities using flora and fauna of sand dunes and above-water beaches:
  - a. Biological Research and Observation
9. Activities using coastal marsh and its flora and fauna:
  - a. Biological Observation
  - b. Wildfowl hunting
10. Activities using coastal strand and brushfields and its flora and fauna:
  - a. Hiking
  - b. Horseback Riding
  - c. Camping
  - d. Recreational Housing
  - e. Recreational Driving
  - f. Biological Observation

Source: Association of Bay Area Governments. Ocean Coastline Study. Supplemental Report IS-5, Berkeley, California: Association of Bay Area Governments, 1970, p. 50.

Table 2. A Typology of Tourism and Recreation Attraction Land-Use Units

A. Primarily Dependent upon Special Natural Resources

- |   |  |
|---|--|
| 1. Beaches                                | 15. Resorts, summer                        |
| 2. Picnic Areas                           | 16. Camps, organization and group          |
| 3. Camping areas, nature                  | 17. Marinas, harbors, boat launching areas |
| 4. General scenic areas                   | 18. Wilderness                             |
| 5. Scenic spectaculars (waterfalls, etc.) | 19. Animal observation areas               |
| 6. Rock collecting areas                  | 20. Waterways                              |
| 7. Shell collecting areas                 | 21. Vacation home sites                    |
| 8. Hunting areas                          | 22. Prospecting sites                      |
| 9. Fishing areas                          | 23. Forest produce collecting areas        |
| 10. Skiing and winter sports areas        | 24. Trail bike areas                       |
| 11. Snowmobile areas                      | 25. Nature trail areas (foot, horse)       |
| 12. Boating, canoeing, sailing areas      | 26. Bird watching areas                    |
| 13. Resorts, winter (northern)            | 27. Spelunking areas                       |
| 14. Resorts, winter (southern)            | 28. Scuba/submarine exploration areas      |

B. Primarily Dependent upon Special Cultural Resources

- |  |   |
|--|---|
| 1. Archaeological sites, digs              | 7. Manufacturing plants                         |
| 2. Museums                                 | 8. Institutions (outstanding)                   |
| 3. Historic restorations, ghost towns      | 9. National shrines                             |
| 4. Landmarks, firsts, one-of-a-kind        | 10. Sightseeing tour sites, culturally oriented |
| 5. Ethnic cultures, special concentrations | 11. Dude ranches                                |
| 6. Engineering and scientific wonders      | 12. Legend, lore special areas                  |

C. Not Heavily Dependent upon Either Special Natural or Cultural Resources

- |  |  |
|--|--|
| 1. Concert, drama, pageant areas                 | 10. Restaurants (for tourists, recreationists) |
| 2. Craft exhibits                                | 11. Information centers, rest areas            |
| 3. Camping areas, urban                          | 12. Playfields, playgrounds                    |
| 4. Spectator sports arenas                       | 13. Residential areas of friends and relatives |
| 5. Gold areas                                    | 14. Festival, parade, derby areas              |
| 6. Amusement parks                               | 15. Marine festivals, regattas                 |
| 7. Shopping centers                              | 16. Convention centers                         |
| 8. Night clubs                                   |  |
| 9. Hotels, motels (for tourists, recreationists) |  |

Source: B. H. Ketchum (ed.). The Water's Edge: Critical Problems of the Coastal Zone, Cambridge, Massachusetts: The MIT Press, 1972, p. 96.



APPENDIX II

FACILITY DEVELOPMENT & MANAGEMENT

REFERENCES



## APPENDIX II

### List of Key Recreational Facility Development and Management References

#### Boating

1. Adie, D. W. Marinas: A working Guide to their Development and Design. Boston: Cahners Books, 1975.
2. Chaney, C. A. Marinas: Recommendations for Design, Construction, and Maintenance. New York: National Association of Engine and Boat Manufacturers, Inc., 1961.
3. Dunham, J. W. and A. A. Finn. Smallcraft Harbors: Design, Construction, and Operation, Special Report No. 2. Fort Belvoir, Virginia: Coastal Engineering Research Center, U.S. Army Corps of Engineers, 1974.
4. Outboard Boating Club of America and the Sport Fishing Institute. Proceedings of Bi-Annual Conference (Nine conferences to date).
5. Rood, M. V. and R. Warren. The Urban Marina: Managing and Developing Marina Del Ray. Los Angeles: University of Southern California Sea Grant Program, 1974.
6. Webber, N. B. (ed.). Marinas and Small Craft Harbors. Southampton, Great Britain: Southampton University Press, 1974.

#### Diving

1. Marsh, J. S. "Marine Parks: An Annotated Bibliography." Bibliography #176. Monticello, Illinois: Council of Planning Librarians, 1971.
2. Schmied, R. L. "Implications of Wilderness Research for the Management of Offshore Marine Sanctuaries." Unpublished professional paper submitted to the Department of Recreation and Parks, Texas A & M University, 1975.

#### Fishing

1. Potter, D. R., Sharpe, K. M. and J.C. Hendee. Human Behavior Aspects of Fish and Wildlife Conservation. Portland, Oregon: Pacific Northwest Forest and Range Experiment Station, U.S. Forest Service, 1973.

2. Texas A & M University and Texas Coastal and Marine Council. Artificial Reefs for Texas. College Station: Texas A & M Sea Grant Program, 1974.
3. Texas A & M University, National Marine Fisheries Service, and Texas Coastal and Marine Council. Proceedings of an International Conference on Artificial Reefs. College Station: Texas A & M Sea Grant Program, 1974.

### Swimming

1. U. S. Army Corps of Engineers. National Shoreline Study: Shore Management Guidelines and Shore Protection Guidelines. Washington, D. C.: U. S. Army Corps of Engineers, 1971.
2. U.S. Public Health Service. Swimming Pools and Natural Bathing Places: An Annotated Bibliography 1957-1966, Public Health Service Publication No. 1586. Washington, D. C.: U.S. Government Printing Office, 1967.

APPENDIX III  
SELECTED CONTACTS

BOATING

Mr. Ron Stone  
Outboard Boating Club of America  
401 N. Michigan Avenue  
Chicago, Illinois 60611

Mr. George Raends  
National Association of Engine and Boat Manufacturers  
P.O. Box 5555  
Grand Central Station  
New York, New York

Mr. Mathew Kaufman, President  
Boating Industry Associated  
401 N. Michigan Ave.  
Chicago, Illinois 60611

Mr. William B. Matthews, Jr.  
National Association of State Boating Administrators  
1825 Virginia St.  
Annapolis, Maryland 21401

Mr. Richard Schwartz  
Boat Owners Association of the U.S.  
1028 Connecticut Ave.  
Washington, D. C. 20036

Mr. Robert F. Burnside  
American National Red Cross  
17th & D Streets, N.W.  
Washington, D. C. 20006

Mr. William D. Clifford  
American Water Ski Association  
7th Street and Avenue G., S.W.  
P.O. Box 191  
Winterhaven, Florida 33880

Mr. Neil W. Ross  
c/o Marine Advisory Service  
University of Rhode Island  
Narragansett, Rhode Island 02882

Contact for Directory for Marine Trade and other Associations concerned  
with Marine Recreation Lists Marine Trade Groups by region and state.



## FISHING

Mr. Richard Stroud  
Sport Fishing Insitute  
608 - 13th Street, N.W.  
Washington, D. C. 20005

Izaak Walton League of America  
1800 N. Kent Street  
Suite 806  
Arlington, Virginia 22209

## SURFING

Gordon Clark  
Western Surfing Association  
25887 Crown Valley Parkway  
South Laguna, California 92677

## SCUBA

National Association of Underwater Instructors  
(NAUI)  
Mr. Jon Hardy  
NAUI General Manager  
22809 Barton Road  
Grand Terrace (Colton), California 92324

### NASDS

Mr. John Gaffney  
P.O. Box 7666  
Long Beach, California 90807

### YMCA

Mr. Ken Brock  
1611 Candler Building  
Atlanta, Georgia 30303

### PADI

Mr. Nick Icorn  
Box 166  
Costa Mesa, California 92627

ENVIRONMENTAL

National Audubon Society  
950 Third Ave.  
New York, N.Y. 10022

Wilderness Society  
1901 Pennsylvania Ave., N.W.  
Washington, D. C. 20006

Sierra Club  
1050 Mills Tower  
San Francisco, California 94104

Nature Conservancy  
Suite 800  
1800 N. Kent St.  
Arlington, Va. 22209

Conservation Foundation  
1717 Massachusetts Ave., N.W.  
Washington, D.C. 20036

National Wildlife Federation  
1412 Sixteenth St., N.W.  
Washington, D. C. 20036

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